

DIFFUSE CUTANEOUS MASTOCYTOSIS

G. H. FINDLAY, M.D.; E. J. SCHULZ, M.B., D.P.H. and W. J. PEPLER, M.D.

Section of Dermatology and Department of Pathology, University of Pretoria

Over the last 20-25 years it has gradually become clear that urticaria pigmentosa is only a clinical form of mast-cell disease. Other cutaneous and visceral types have gradually been recognized, but the number of cases is so small that it is not easy to group them in a way that will show the prevailing clinical patterns in perspective. Marshall *et al.*¹ have contributed an important paper to the South African literature in which the mastocytoses and mastocytomas are discussed, with special reference to the association of cyclical attacks of flushing.

Since mast cells are known to contain important amounts of biologically potent substances (heparin, histamine, sometimes serotonin, and precursors of ground substance), the vasomotor and haemostatic aspects of mast-cell disease have attracted attention. In a personal communication, Marshall² states that cyclical flushing in children with mastocytomas recurs at 4-6 weekly intervals, and in adults at less regular intervals, varying from a few days to several months. One of his patients was Coloured, the others being White. The effects on blood coagulation have been noted in detail by Herzberg.³

The incidence of mast-cell infiltrations (solitary or multiple) in our experience in the Transvaal is about 0.1% in dermatological practice. So far the solitary mastocytomas and the multiple (urticaria pigmentosa) cases have occurred with equal frequency.

In the present paper the classificatory or functional problems will not be discussed. We are concerned only to present the features of a Bantu patient with diffuse cutaneous mastocytosis. Had it not been for the excellent illustrated account in Degos's *Dermatologie*⁴ the nature of the case would have eluded us. Although diffuse cutaneous mastocytosis was first described by Hissard *et al.*⁵ the special features of their case were brought into prominence by Degos⁶ and related to subsequent findings in such a way as to make a prompt clinical diagnosis possible. The diagnostic features in our case are as follows: Generalized pruritus with prurigo papules, a generalized shagreen-like skin surface, flexural giant pseudolichenification, flexural intracutaneous tumour formation unrelated to lymph glands, and areas of surface ulceration. Colour changes, while of help in a White skin, are of very little aid in our Bantu patient, whose skin also showed a widespread increase in pigmentation beyond the normal for his race.

Although the findings in our patient fit the account of Degos with precision, there was some delay in identifying the diagnostic cell type in haematoxylin-and-eosin stained sections. While the diagnosis was in histological doubt several alternative diagnoses were entertained. Firstly, foamy cells were seen in some sections, and xanthoma disseminatum was then suspected—a condition showing papules

round the eyes and flexural infiltrations. The foam, however, proved to be unstainable with fat stains on frozen sections. Secondly, the presence of some dilated vessels in the sections, the rough skin, and the corneal opacity, suggested Fabry-Ruiter's disease, angiokeratoma corporis diffusum. However, the intervening skin between papules was nowhere normal, the vessels were not ectatic enough, and there was no cardiovascular disease or any lipid storage to support this alternative. Thirdly, an epidermal dystrophy of hereditary or acquired type was considered. Lastly, a typical Darier's disease with flexural vegetations, generalized acanthosis nigricans, bullous and ulcerating erythrodermatitis, and generalized confluent papillomatosis (Gougerot-Carteaud), were variously entertained, but the clinical and histological features of all of them fitted either poorly or not at all with the findings in our case. Retrospectively, onchocerciasis might also have been considered, though the patient had only lived in the Northern Transvaal.

The description of diffuse cutaneous mastocytosis may suggest a fairly constant picture, but this is perhaps deceptive. Firstly, our patient showed no demonstrable visceral involvement, and secondly other rather similar cases have more definite urticaria-pigmentosa lesions as well.⁷ It is at present difficult to arrive at a clear prognosis, since the described patients, in this and related groups of cases⁸, tend to languish in rather poor health for no easily explained reason. Perhaps the soundest attitude is to call the condition a mast-cell reticulosis, which groups it with other reticuloses, and the general symptoms will then fall in line with the diversity of complaints met with in the group of chronic but malignant reticuloses of other types.

CASE REPORT

We first saw this patient in 1959. He was a 60-year-old Bantu male, in whom an itching rash had developed on the thighs 23 years before at the age of 37. During the same year (1936) the rash spread to the rest of the trunk and limbs, where it persisted unchanged for 12 years. He then noted a gradual thickening and hardening of the skin, which was followed by recurrent ulceration of the palms and soles. In 1958, a year before admission, the face and ears became affected by the same itching thickened skin alteration for the first time, and then he also developed tumours behind the knees and in the groins. At the same time there developed ulcerations of the genitalia and an eye complaint that blinded him. Apart from colds, earache and a chronic cough, the history yielded little else of note.

On examination there was a generalized velvety to rasp-like papillomatosis with increased pigmentation, and on the face, trunk and perineum a picture resembling papular eczema-prurigo. In the groins this papillomatosis resembled lichenification. On the palms, soles and genitalia and over the flexural tumours (see below) there were septic macerated ulcerations which healed slowly, leaving depigmentation. Depigmentation of the scratched prurigo papules was also noted. The tumours in the knee flexures and upper thigh mentioned in the history were observed. Dermo-

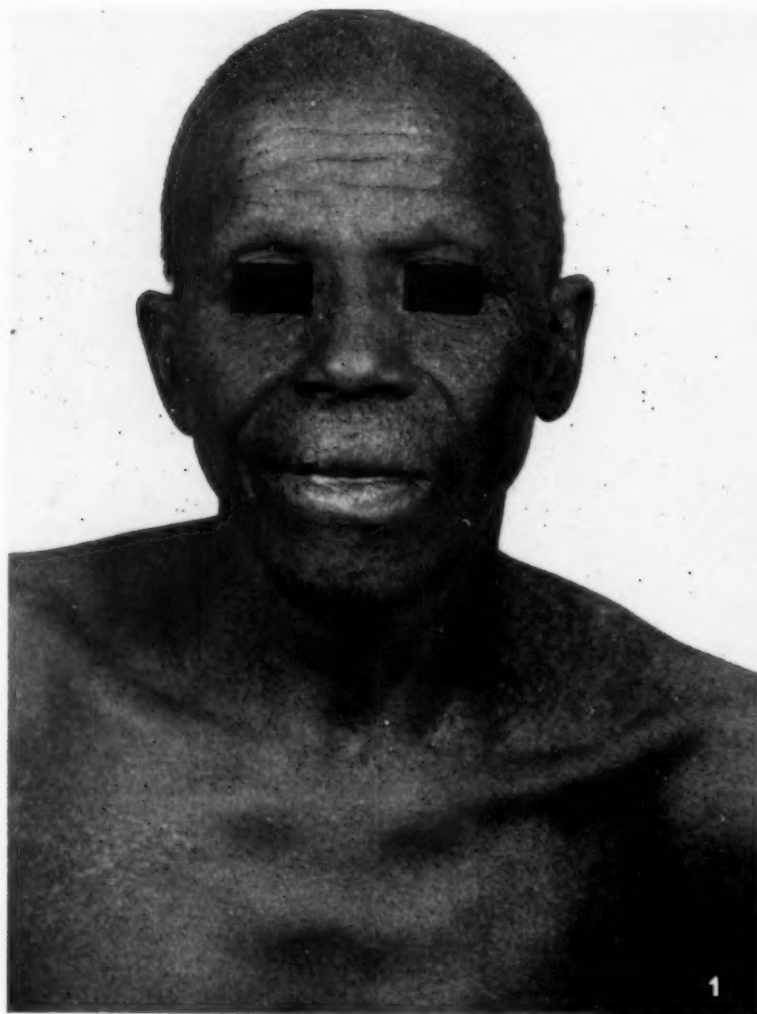


Fig. 1. Diffuse mastocytosis. Diffuse papulation, pigmentation and infiltration of skin (opaque corneas).



Fig. 2. Diffuse mastocytosis. Flexural papillomatosis with pseudolichenification in the elbow.

graphism with palpable urtication was present. There was a vascularizing and non-ulcerating keratitis in both eyes, with conjunctival pigmentation of the palpebral conjunctiva. Both ear drums had been destroyed by otitis media. There was a productive cough yielding *Diplococcus pneumoniae* in the sputum, without any radiological changes of importance in the chest. There was no detectable cardiac abnormality. The abdomen was normal and no radiological enlargement of liver or spleen was noted. Disturbed liver function, in keeping with the common findings among the Bantu, was present, there being an inverted A/G ratio, raised zinc-sulphate test and a 50% prothrombin value. The blood calcium was not raised. Blood cholesterol 241 mg.% and total lipids 416.4 mg.%. Kolmer and Price reactions negative.

The blood count and bone-marrow findings were completely normal. The bleeding and clotting times were normal. A slight plasmocytosis was seen on sternal puncture, and no basophil cells. There was no general adenopathy. A suppurative adenitis developed in the left groin and pelvis from a *Staph. aureus* infection. It required surgical drainage and came presumably from the genital and foot ulcerations. No evidence of mastocytomas could be found on X-ray examination of the entire bony skeleton.

Histological Findings

The material examined consisted of 9 skin biopsies and 1 superficial corneal biopsy. Of the skin biopsies 6 were taken before therapeutic irradiation and 3 after completion of the treatment. The post-irradiation biopsies were taken from the tumours in the knee flexures and upper thigh; those taken before treatment were from the same tumours and also from the lesions on the face, neck, groins and shoulders.

The specimens were all fixed in 10% neutral formalin and processed in the usual way, and paraffin sections were cut at 4 μ . In addition to the haematoxylin-and-eosin preparations, sections from each block were stained with 0.5% aqueous toluidine blue and also with pinacyanol erythrosinate according to the method of Bensley.⁸ The Scharlach R method for fat was used on selected blocks.

Histological examination of the sections from the flexural tumours showed a well-marked hyperkeratosis, papillomatosis and follicular plugging of the epidermis. An irregular acanthosis was also present and some of the acanthotic processes projected fairly deep down into the dermis. In the middle and upper thirds of the

Fig. 3.
Fig. 4.

dermis there were numerous eosinophilic nuclear leucocytes with cytoplasmic cells with capillaries infiltrate.

was much mainly at

The skin numerous cells were

Although dendritic smaller, especially pinacyanol

Examined essentially such as one biopsy appeared the major infiltrate. The m of 10 ad in 10 ad magnific 20 fields irradiated



Fig. 3. Diffuse mastocytosis. Healed ulceration of penis and quadrillated skin thickening over groin tumours.

Fig. 4. Diffuse mastocytosis. Tumours in popliteal fossa.

dermis there was a fairly diffuse cell infiltration composed of numerous histiocytes and plasma cells with a few lymphocytes, eosinophil leucocytes, and a very occasional polymorphonuclear leucocyte. Some of the histiocytes showed a vacuolated cytoplasm, but neutral fat could not be demonstrated in these cells with the fat stain that was used. A number of angiectatic capillaries, venules and lymphatics were seen in the vicinity of the infiltrate. In the deeper part of the dermis the cellular infiltrate was much less pronounced and the few cells seen were arranged mainly around the blood-vessels.

The specially stained preparations showed the presence of numerous mast cells throughout the thickness of the dermis. These cells were mostly fully granulated, but varied considerably in size. Although the majority of cells were of the globular type, occasional dendritic and spindle-shaped forms were also present. Some of the smaller, globular mast cells were poorly granulated and these, especially, were much more clearly demonstrated with the pinacyanol erythrosinate method than with toluidine blue.

Examination of the biopsies taken from other areas showed essentially similar appearances except that the epidermal changes such as the papillomatosis and acanthosis varied in degree from one biopsy to the other. In the dermis the inflammatory-cell infiltrate was much less pronounced, but the number of mast cells appeared to be about the same. It would therefore appear as if the major part of the tumours is composed of the inflammatory infiltrate.

The mast cells in the individual biopsies were counted in a series of 10 adjacent fields immediately below the epidermis and also in 10 adjacent fields immediately below the first row of fields. The magnification used was 800. The mean number of mast cells per 20 fields of the different biopsy specimens was 195. In the post-irradiated lesions the mean mast count was 125 per 20 fields and

the cells as a whole were more sparsely granulated. Otherwise the appearances were essentially similar.

Section of the specimen of cornea showed the presence of a bandlike infiltrate in the subepithelial area. The infiltrate consisted of lymphocytes, plasma cells, and a few eosinophil leucocytes, but only a very occasional mast cell could be demonstrated in the specially stained preparations.

COMMENT

In this patient with a clinically typical, diffuse mastocytosis (type Hissard-Degos) the mast cells were not predominant in the cellular infiltrate. Prakken and Woerdeman¹⁰ have published figures of the mast-cell counts in sections from urticaria pigmentosa. By recalculating their values, our mast-cell count of 195 cells in 20 fields of a magnification of 800 at a section thickness of 4 μ falls within their range of 110 - 290 cells in 10 fields of 690 magnification at 7 μ for urticaria pigmentosa.

If we had had only our own patient to conclude from, the importance of the mast cells might readily have been overlooked. The absence of visceral mast-cell disorder after more than 20 years, the lack of frank urticaria-pigmentosa lesions, and the presence of the histiocyte, lymphocyte and plasma-cell infiltration would have classed the condition as an obscure chronic inflammation. This last possibility would

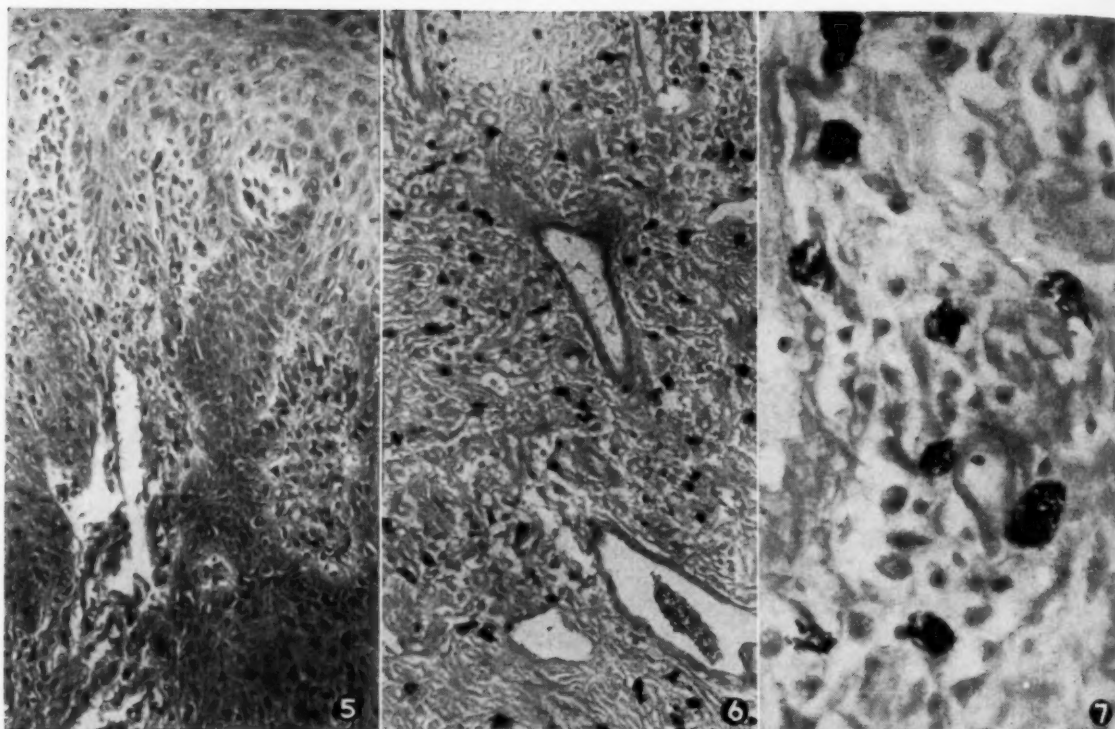


Fig. 5. Diffuse mastocytosis. Section of the tumours in the popliteal fossa showing hyperplastic and acanthotic epidermal changes with underlying inflammatory cell infiltration and slight angiectases. H & E $\times 80$.

Fig. 6. Diffuse mastocytosis. The section demonstrates the increase of mast cells in the dermis. Pinacyanol erythrosinate $\times 80$.

Fig. 7. Diffuse mastocytosis. Fully granulated mast cells, which are mainly of the globular type. Pinacyanol erythrosinate $\times 320$.

still have been entertained had the clinical distinctiveness of the condition not overruled the histological obstacles to the diagnosis.

SUMMARY

A case of diffuse cutaneous mastocytosis of 23 years' duration in a 60-year-old Bantu male is presented.

FORTHCOMING INTERNATIONAL MEDICAL CONFERENCES

The First International Conference on Congenital Malformations, under the sponsorship of The National Foundation (USA), will be held at Church House, Dean's Yard, Westminster, London, S.W. 1, on 18-22 July 1960. The Conference will consist of 8 sessions dealing with 'Incidence', 'Intrinsic factors (genetics)', 'Extrinsic factors (environment)', 'General developmental mechanisms', 'Abnormal developmental mechanisms', 'Maternal foetal interactions', 'Physiological and medical problems' and 'Perspectives'. Papers are to be presented on invitation only.

The proceedings of all sessions, including all scientific papers presented, official delegate reports, and a summary of the discussions, will be edited and published as the official proceedings of the Conference.

Entertainment and tours have been arranged for members of the Conference as well as a series of special events for ladies accompanying participants.

It is advised that travel and accommodation arrangements should be made through Messrs. Thos. Cook and Son, or the American Express Company as soon as possible.

Correspondence and inquiries regarding the Conference should be addressed to the Secretariat of the Conference, 67 New Bond Street (Dering Yard), London, W. 1, England. Cables: 'Conmal' London.

1. Marshall, J., Walker, J., Lurie, H. I., Hansen, J. D. L., and McKenzie, D. (1957): *S. Afr. Med. J.*, 31, 867.
2. Marshall, J. (1959): Personal communication.
3. Herzberg, J. J. (1959): *Arch. klin. exp. Derm.*, 208, 559.
4. Degos, R. (1953-59): *Dermatologie*. Paris: Flammarion.
5. Hissard, R., Moncourier, L., and Jacquet, J. (1951): *Presse méd.*, 59, 1765.
6. Degos, R. (1956): 9th Congress, Assoc. Derm. Syph. Langue Franc., 33.
7. Berlin, C. (1955): *A.M.A. Arch. Derm.*, 71, 703.
8. Beare, J. M. (1958): *Brit. J. Derm.*, 70, 418.
9. Bensley, S. H. (1952): *Stain Technol.*, 27, 269.
10. Prakken, J. R. and Woerdeman, M. J. (1952): *Dermatologica (Basel)*, 105, 116.

Czechoslovak Congress of Rheumatology. The Czechoslovak Society of Physical Medicine is holding the Czechoslovak Congress of Rheumatology with international participation from 21 to 25 September 1960 in Piešťany, the world-famous spa. Two main subjects will form the principal part of the programme: Rheumatoid arthritis and ochronotic arthropathy. A certain amount of time is reserved for subjects of free choice.

Papers will be read by leading research workers from Bulgaria, Denmark, Finland, France, Germany, Great Britain, Hungary, Italy, Norway, Poland, Rumania, Soviet Union, Sweden, the USA, and Czechoslovakia. The official languages of the Congress are English, French, Russian, German, Czech and Slovak. Simultaneous translation to and from the official languages will be provided.

Excursions to Bratislava, the capital of Slovakia and to the Tatra Mountains, and social and cultural functions will be arranged for the participants. A special programme is being prepared for the accompanying family members.

The Secretariat of the Czechoslovak Congress of Rheumatology, Praha 2, Na slupi 4, will be pleased to give any further information that may be required.

Die vol
vol lug
blaas,
van die
reserve
volume
ele volu
die vier
bepaling
tot die
van asp
keuring
chirurgi
Hutch
wie hy
het, gep
betaam
Hy het
lengte,
Na o
proef w
1925.
d.w.s. 3
hierdie
om V.K
Seder
Gross
word, f
geregist
gevind
bestude
waarin
golwing
selfs T
gekritis
kritiese
egter d
Hulle v
punt er
Bernste
hierdie
heid va
giese v
ware v
mens te
Niete
gevolg
van die
Gaer
wat uit
van die
dan u
Leualle
uitgebl
'n met
vloei—
gebruik

DIE VITALE KAPASITEIT

Die volume lug wat 'n mens nodig het om sy borskas so vol lug as wat moontlik is te maak en daarna volkome uit te blaas, behels die vitale kapasiteit (V.K.). Dit sluit dus drie van die primêre longvolumes in, nl. wissellug, inspiratoriese reserve volume, en ekspiratoriese reserve volume. Die volume wat agterbly na volkome uitaseming is dus die residuele volume. Dit volg dus dat 'n afwyking van enige van die vier primêre longvolumes weerspieël sal word in die bepaling van die V.K. Hierdie eienskap het aanleiding gegee tot die gebruik van die V.K. as 'n siftingstoets by die keuring van aspirante vir die Britse Lugmag, in 1914, en by die keuring van gevalle met empieem wat baat sou vind by chirurgie, in 1918.^{1,2}

Hutchinson het in 1846 sy resultate by 3,000 gevalle, op wie hy die V.K. met 'n spirometer van sy eie ontwerp bepaal het, gepubliseer.³ Soos dit 'n wetenskaplike van sy formaat betaam, was hy versigtig, maar baie korrek in sy afleidings. Hy het gevind dat vier faktore die V.K. beïnvloed, t.w. lengte, gewig, ouderdom en siekte.

Na ons wete is die V.K. die enigste enkele longfunksie-proef waaraan 'n hele monogram⁴ gewy is, en wel reeds in 1925. Die skrywer daarvan, J. A. Myers, voel in 1957, d.w.s. 32 jaar later, nog so sterk oor die kliniese waarde van hierdie toets dat hy die uitlating maak: 'Dit is net so belangrik om V.K.-bepalings te maak as om die bloeddruk te bepaal'.⁵

Sedert 1938 het verskeie werkers, onder wie Barach (1938), Gross (1943), en Tiffeneau (1947-52) veral genoem mag word, gevind dat as die V.K. op 'n snel bewegende drom geregistreer word, 'n baie kenmerkende vorm van kurwe gevind word.⁶ Die ekspiratoriese fase is dan ook sorgvuldig bestudeer, en Kennedy het heelwat geskifte die lig laat sien waarin die betekenis van 'n sogenaamde 'kritiese punt' en golwinge op die ent van die kurwe beklemtoon is.⁷⁻⁹ Hy het selfs Tiffeneau en andere se gebruik van die 1-sekund-V.K. gekritiseer op grond van die feit dat van hulle metings na die kritiese punt sou val.⁹ Kazantzis¹⁰ en Bernstein¹¹ beskryf egter die kurwe as glad en reguit-gebuig sonder golwinge. Hulle was verder in staat om aan te toon dat hierdie kritiese punt en golwinge die gevolg van Kennedy se apparaat was. Bernstein¹¹ eindig dan sy studie met die waarskuwing dat 'hierdie studie toon hoe noodsaaklik dit is om die akkuraatheid van apparaat vas te stel as dit gebruik word om fisiologiese verskynsels te registreer—alvorens sulke kurwes as 'n ware voorstelling van die feite aanvaar word en alvorens mens te vrylik vanaf sulke bevindings gevolgtrekkings maak.'

Nietemin het hierdie doodloopstraat waarskynlik ten gevolg gehad dat verskeie metings op die ekspiratoriese been van die snelgeskrewe V.K. gemaak word.

Gaensler¹² het voorgestel die bepaling van die volume wat uitgeasem word in die eerste, tweede en derde sekonde van die tydsgemete V.K. (T.V.K.) geneem word en dat dit dan uitgedruk word as persentasie van die totale V.K. Leuallen en Fowler⁶ het die volume wat per tydeenheid uitgeblaas word tydens die middel van ekspirasie voorgestel—'n meting wat bekend is as die maksimale mid-ekspiratoriese vloei—en hierdie twee metings is dan vandag nog in algemene gebruik.

As die klem op spoed gelê word, vind ons die geforseerde ekspiratoriese volume (forced expiratory volume) van die Engelse werkers. Dit word gewoonlik oor een sekonde gemeet en dan afgekort as F.E.V.₁.

Al hierdie interessante argumente het, hoewel grootliks van akademiese belang, tog ook gelei tot belangrike kliniese toepassings. Waar die V.K. tydelik verdring geraak het onder 'n massa literatuur oor meer ingewikkelde bepaling, vind ons dat soos ons 'n beter begrip begin kry van die fisiologie van asemhaling, die V.K., indien dit reg gemeet, geregistreer en geïnterpreteer word, ons 'n magdom informasie verskaf, terwyl sy bepaling nog altyd goedkoop, maklik en gou geskied.

So kan ons byvoorbeeld noem dat Dail en Affeldt¹³ die V.K. gebruik as 'n indeks van asemhaling-spiërfunksie en dit betroubaar gevind het om te bepaal wanneer mense met verlamming van die asemhalingspiere kunsmatige asemhaling nodig sal hê, en vir objektiewe opvolging in sulke gevalle.

Die F.E.V.₁% word deur Thomson en Hugh-Jones¹⁴ nuttig gevind as 'n toets vir die suksesvolle behandeling van asma, terwyl Capel en Smart¹⁵ 'n noue korrelasie tussen oefenings-inkorting en die F.E.V.₁ vind. Dit help ook onderskei tussen die dispnee van hartversaking en dié as gevolg van chroniese brongitis en emfiseem.

Selfs die verwaarloosde inspiratoriese fase geniet aandag en die maksimale spoed van inspiratoriese en ekspiratoriese vloei, as verhouding tot mekaar uitgedruk, blyk byna diagnosties te wees in gevalle van emfiseem.¹⁶

Die gemak en spoed waarmee die V.K. en ook die T.V.K. teen 'n geringe kapitale ontkoste bepaal kan word, sal ongetwyfeld lei tot die roetine gebruik van dié bepaling in die spreekkamer en hospitaalsaal. As 'n siftingstoets mag dit later net so 'n roetine-instelling vir die narkotiseur word as die pre-operatiewe bepaling van die bloeddruk en die hemoglobien.

In die moeilike geval waar dispnee die hoofklagte is en waar klinies nie tot 'n gevolgtrekking kan geraak word of dit pulmonaal of kardiaal van oorsprong is nie, kan die T.V.K. soms deurslaggewend wees.

Meer as 'n eeu na Hutchinson kan ons berig dat ons die invloed van sy eerste drie faktore, nl. lengte, gewig en ouderdom op die V.K. akkuraat met formules kan bepaal en die verwagte V.K. vir 'n persoon van gegewe liggaamsbou en ouderdom vanaf monogramme of tabelle kan aflees. Wat sy vierde faktor betref, kan ons sê dat ons groot vordering gemaak het in die afbakening van siekte-toestande en hulle invloed op die V.K., maar ons moet toegee dat 'n groot veld nog braak lê.

Hutchinson³ het sy artikel afgesluit met die woorde: 'Nietemin, die feite kan nooit verander of afwyk van hulle verband met asemhaling nie—een van die mees belangrike funksies van dierlike ekonomie'. Ons wil egter as 'n postuum apologie teenkap dat die longfunksie-proewe hierdie 'mees belangrike funksie' blootgelê het as 'n gekompliseerde funksie en dat die onwrikbare feite onderhewig is aan faalbare menslike interpretasie, veral op 'n gebied wat besaai is met strikvalle.

1. Dreyer, G. en Hanson, G. F. (1921): *The Assessment of Physical Fitness*. New York: Paul B. Hoeber.
2. Graham, E. A. (1920): *J. Amer. Med. Assoc.*, 75, 992.
3. Hutchinson, J. (1846): *Lancet*, 1, 630.
4. Myers, J. A. (1925): *Vital Capacity of the Lungs*. Baltimore: Williams & Wilkins.
5. *Idem*, red. Gordon, B. L. (1957): *Clinical Cardiopulmonary Physiology*. New York en London: Grune & Stratton.
6. Leuallen, E. C. en Fowler, W. S. (1955): *Amer. Rev. Tuberc.*, 72, 783.
7. Kennedy, M. C. S. (1950): *Beitr. Silikose-Forsch.*, 10, 619.
8. Kennedy, M. C. S. en Stock, J. P. P. (1952): *Thorax*, 7, 43.
9. Kennedy, M. C. S. (1953): *Ibid.*, 8, 73.
10. Kazantzis, G. (1953): *J. Physiol.*, 122, 77.
11. Bernstein, L. (1954): *Thorax*, 9, 63.
12. Gaensler, A. E. (1951): *Amer. Rev. Tuberc.*, 64, 256.
13. Dail, C. W. en Affeldt, J. E. (1957): *Arch. Phys. Med.*, 38, 383.
14. Thomson, W. B. en Hugh-Jones, P. (1958): *Brit. Med. J.*, 1, 1093.
15. Capel, L. H. en Smart, J. (1959): *Lancet*, 1, 960.
16. McNeill, R. S. Malcolm, G. D. en Brown, W. R. (1959): *Thorax*, 14, 225.

THE SEX OF TERATOMAS

In the great majority of tumours the nuclear sex of the cells follows that of the host. Certainly in some tumours with very pleomorphic nuclei, the sex chromatin may not be easily recognized and, in any case, difficulties in interpretation in this group are to be expected because of chromosomal irregularities. However, when tumours are well differentiated, whatever their type, the nuclear sex pattern is normally plain. All teratomas in females apparently have the female sex pattern. On the other hand, in the males about half are 'male' and half 'female'. This appears definitely established—at least for testicular teratomas.¹⁻⁴ (It is possible that some of the other reported teratomas in men arose in patients with chromatin-positive Klinefelter's syndrome!) The original explanation^{1, 2} for this was that teratomas arose from haploid cells (cells with half the normal chromosome number), either by fusion of one pair or by duplication of chromosomes in one haploid cell. Now, since all haploid cells of the female must contain the X chromosome, all diploid cells which rise from them must be XX and so show a female nuclear pattern. But male haploid cells may contain the X or Y sex chromosome, so that however diploids may come to be formed from them, both XY and XX are possible combinations. In the testis this can readily be believed, since haploid cells, which are produced by reduction division (meiosis), occur normally as part of the process of spermatogenesis. A testicular teratoma, then, may be considered as a kind of parthenogenetic offspring of the germ cell.⁵ Presumably an ovarian teratoma will be similar.

Myers,⁶ who has recently investigated the collection of teratomas made by Professor Willis, made a very detailed and careful study of their nuclear pattern. In general her conclusions confirmed the previous ideas, as outlined above, but there arose two special points which threw some doubt on these ideas. Firstly, the ductuli efferentes of the testis

were found to have the high sex chromatin count of fifty-six per cent which suggested the possibility that teratomas might spring from them. Secondly, and more definite, the findings with regard to testicular teratomas indicated that the origin of these tumours was more complicated than previously thought. Myers examined thirty-three specimens and found thirteen to show uniformly the male pattern of sex chromatin and ten uniformly the female pattern. Eight, however, were mosaics consisting of both male and female tissues mixed, while two showed a doubling of sex chromatin (i.e. two distinct bodies) in almost half of their nuclei. Previous workers would have been certain to call a mosaic 'female', since chromatin bodies would be well seen in some areas, and in areas where they were not seen technical reasons would be assumed to account for this. Myers' findings appear to be conclusive and she claims that they invalidate the theory of parthenogenesis. *The Lancet*⁵ points out, however, that mosaic teratomas could arise from a group of cells rather than a single cell and so still be parthenogenetic.

Now that squash techniques and tissue culture allow the actual chromosomes to be seen and studied the problem should be capable of being answered with certainty. Galton and Benirschke⁷ have described their findings in a metastasizing teratoma of the ovary which showed a female type of nuclear pattern with sex chromatin present. The chromosomes were forty-six in number and the sex chromosomes were the normal female XX. This of course is not really what was needed—the testicular tumours are the important ones—but we must await more work on these in the belief that more definite results will not be long in coming.

1. Hunter, W. F. and Lennox, B. (1954): *Lancet*, 2, 633.
2. Tavares, A. S. (1955): *Ibid.*, 1, 948.
3. Moore, K. L. and Barr, M. L. (1955): *Brit. J. Cancer*, 9, 246.
4. Ashley, D. J. B. and Theiss, E. A. (1958): *Science*, 128, 434.
5. Editorial (1959): *Lancet*, 2, 777.
6. Myers, L. (1959): *J. Path. Bact.*, 78, 43.
7. Galton, M. and Benirschke, K. (1959): *Lancet*, 2, 761.

SUICIDE AND ATTEMPTED SUICIDE

GORDON K. KLINTWORTH, B.Sc., M.B., B.Ch.

Department of Psychological Medicine, Johannesburg General Hospital

A major psychiatric problem in general hospitals is constituted by the cases presenting at the casualty department for 'attempted suicide', having taken noxious agents, or with self-inflicted wounds. There has always been a difficulty in deciding whether such attempts at suicide should be considered serious or not. At the Johannesburg General Hospital it has recently been the policy to admit the majority of such cases to the wards for observation and psychiatric assessment, any emergency treatment that is required being given in the casualty department.

The present study was carried out in order to determine the incidence of suicide and attempted suicide in Johannesburg. For 1958 all 'suicidal' admissions to the Johannesburg General Hospital were reviewed and the suicides which took place in the Johannesburg area analysed. Admissions to this hospital are limited to Europeans over the age of 14 years.

(A) *Cases of Suicide and Attempted Suicide Admitted to Johannesburg General Hospital*

1. *Incidence.* During 1958, 358 admissions were made to the general medical and surgical wards because of attempted

suicide.
whom 17
original
Hospital
admission
2. Tim
place th
in the ev
12 p.m. (



Fig. 1.
for su

3. Dis
differenc
days of
4. Dis
or less e
5. Ag
attempte

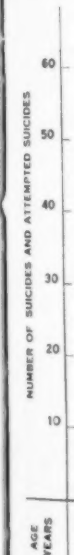


Fig. 2.
area,

suicide. These admissions were made by 337 patients, of whom 17 died in the hospital and 1 (from the effects of the original poison) a few weeks later after transfer to Tara Hospital. The 319 patients who survived constituted 340 admissions.

2. *Time of admission.* The admissions to hospital took place throughout the day and night. The majority occurred in the evening, with the greatest incidence between 11 and 12 p.m. (Fig. 1).

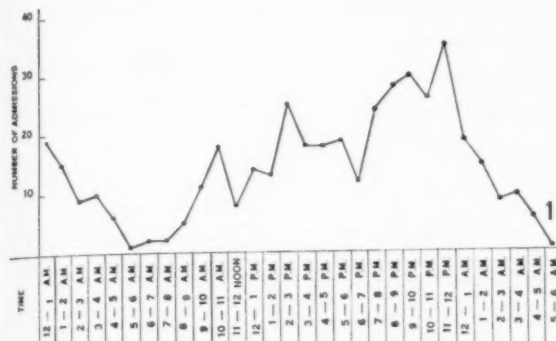


Fig. 1. Admissions (1958) to Johannesburg General Hospital for suicide and attempted suicide, by time of admission.

3. *Distribution over the week.* There was no significant difference in the number of admissions during the different days of the week.

4. *Distribution over the year.* The admissions were more or less evenly distributed over the year.

5. *Age and sex distribution (Fig. 2).* The admissions for attempted suicide included patients in both sexes between

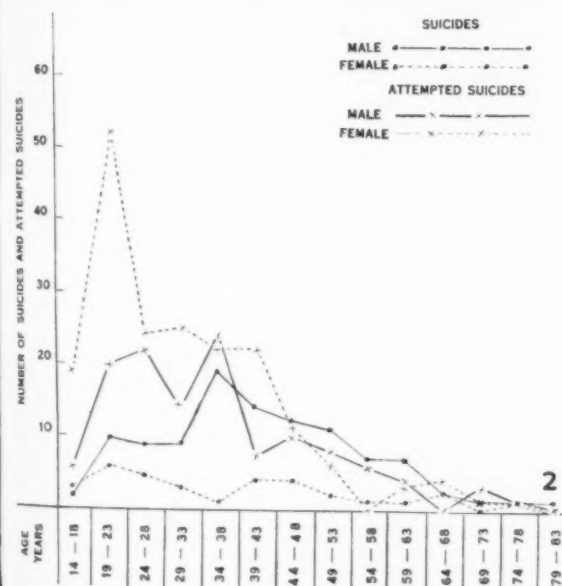


Fig. 2. Age and sex distribution of suicides in the Johannesburg area, and of attempted suicide admitted to Johannesburg General Hospital (1958).

the ages of 14 (the minimum age for admission to this hospital) and 78. The females were more numerous than the males. This difference was more marked in the younger age-groups; from 44 years onwards the admissions were more or less equal for the two sexes. The age-group in which admission for attempted suicide were commonest was 19-23. In this group the number of females admitted was more than 2.5 times the number of males.

6. *Duration of hospitalization.* The 319 patients who had 358 admissions between them spent 920 days in this hospital, the average number of days per admission being 2.57. This does not include the time which some cases spent in other hospitals after being referred for further psychiatric treatment.

7. *Previous suicidal attempts.* Of the cases admitted to hospital, in 79.6% there was no history of a previous attempt at suicide; 11.0% had a record of 1 previous attempt, 3.13% of 2 previous attempts and 6.27% of more than 2 previous attempts. Some cases were admitted to the hospital for attempted suicide on more than one occasion during 1958—11 on 2 occasions, 2 on 3 occasions, and 1 on 7 occasions.

8. *Methods.* The commonest method of attempting suicide was by ingestion of 'poisons'. This method was used by 82.6% of the cases. The group of poisons most commonly used was the hypnotics (32.9%). The commonest substance used was aspirin (acetylsalicylic acid, 10.5%); noludar (methylprylone) was second (7.34%) and seconal (quinalbarbitone) third (7.09%). At least 79 different substances were ingested by this group of cases. The 'poisons' included almost anything available in a household. The methods used are shown in Table I. The majority of cases (83.7%) only ingested one substance or used a single other method. There were cases, however, who simultaneously 'attempted suicide' by more than one method; 12.5% combined 2 methods and 3.76% combined more than 2 methods.

TABLE I. METHODS USED IN ATTEMPTED SUICIDE (1958)*

Methods	Male	Female	Total	%
I. Poisons	115	223	338	82.64
(A) Hypnotics	43	92	135	32.91
(i) Barbiturates	25	40	65	15.90
1. Seconal (quinalbarbitone) ..	13	16	29	7.09
2. Phenobarbitone	8	14	22	5.38
3. Nembutal (pentobarbitone) ..	1	6	7	1.71
4. Tuinal (amytal + seconal) ..	2	1	3	0.73
5. Veronal (barbitone)	1	1	2	0.49
6. Butobarbitone (soneryl) ..	—	1	1	0.24
7. Amytal (amylorbarbitone) ..	—	1	1	0.24
(ii) Non-barbiturate Hypnotics ..	10	26	36	8.80
1. Noludar (methylprylone) ..	8	22	30	7.34
2. Monoureides	2	2	4	0.98
3. Glutethimide	—	1	1	0.24
4. Paraldehyde	—	1	1	0.24

* Fatal cases are excluded from this table. If a patient was admitted to the hospital for attempted suicide on more than one occasion, or if multiple means were used, then each admission or method is separately recorded in the table.

Method	Male	Female	Total	%
(iii) Unidentified 'sleeping tablets'	8	26	34	8.31
(B) Analgesics	22	52	74	18.09
1. Aspirin (acetylsalicylic acid)	13	30	43	10.51
2. A.P. Codeine	7	11	18	4.40
3. Anadin†	2	2	4	0.98
4. A.P. Caffeine	—	2	2	0.49
5. Saridone	—	2	2	0.49
6. Codis	—	2	2	0.49
7. Pethidine	—	1	1	0.24
8. Omnopon	—	1	1	0.24
9. Physeptone	—	1	1	0.24
10. Edrisol (aspirin & dexedrine)	—	1	1	0.24
† (Acetophenetidin acetylsalicylic acid and caffeine)				
(C) Insecticides and Rodent Toxins	15	16	31	7.58
1. 'Ant poison'	6	11	17	4.16
2. DDT	3	3	6	1.47
3. 'Rat poison'	4	1	5	1.22
4. 'Fly poison'	1	1	2	0.49
5. 'Snail pellets'	1	—	1	0.24
(D) Corrosives	9	11	20	4.89
1. Lysol	4	3	7	1.71
2. Caustic soda	2	5	7	1.71
3. Carbolic acid	1	1	2	0.49
4. Ammonia	1	1	2	0.49
5. Nitric acid	—	1	1	0.24
6. Hydrochloric acid	1	—	1	0.24
(E) Miscellaneous Drugs and Poisons	24	38	62	15.16
1. 'Chlorodyne'	3	2	5	1.22
2. Antihistaminics	1	4	5	1.22
3. Sulphonamides	1	4	5	1.22
4. Phenytoin	1	3	4	0.98
5. Methyl salicylate	2	1	3	0.73
6. Preludin	—	2	2	0.49
7. Quinine	1	1	2	0.49
8. Equanil (meprobamate)	—	1	1	0.24
9. Dexedrine	—	1	1	0.24
10. Ritalin	1	—	1	0.24
11. Chlorpromazine	—	1	1	0.24
12. Selenium	1	—	1	0.24
13. Dramamine	1	—	1	0.24
14. Ephedrine	1	—	1	0.24
15. Iodine	—	1	1	0.24
16. Pot. permanganate	—	1	1	0.24
17. Insulin	—	1	1	0.24
18. Hydrogen peroxide	1	—	1	0.24
19. Tinct. benz. co.	1	—	1	0.24
20. Terramycin	—	1	1	0.24
21. Mercurochrome	—	1	1	0.24
22. Acriflavin	—	1	1	0.24
23. Methylene blue	—	1	1	0.24
24. Gentian violet	1	—	1	0.24
25. Washing soda	1	—	1	0.24
26. Methyl alcohol	—	1	1	0.24
27. Camphorated oil	—	1	1	0.24
28. Croton oil	1	—	1	0.24
29. Smelling salts	—	1	1	0.24
30. 'Fume tablets'	—	1	1	0.24
31. 'Slimming ointment'	—	1	1	0.24
32. 'Bottle of tonic'	1	—	1	0.24
33. 'Nerve tonic'	1	—	1	0.24
34. Strychnine	—	1	1	0.24
35. Alophen	—	1	1	0.24
36. Liquid paraffin	—	1	1	0.24

Method	Male	Female	Total	%
37. 'Nomisol'	1	—	1	0.24
38. 'Sanpic'	—	1	1	0.24
39. Naphthalene (moth balls)	1	—	1	0.24
40. 'Silvo'	1	—	1	0.24
41. Petrol	—	1	1	0.24
42. Paraffin	1	—	1	0.24
43. Benzine	—	1	1	0.24
(F) Unidentified 'Tablets'	3	14	17	4.16
II. Hanging	—	—	—	—
III. Burning	—	1	1	0.24
IV. Gunshot	1	—	1	0.24
1. Head	1	—	1	0.24
2. Chest	—	—	—	—
3. Abdomen	—	—	—	—
V. Gassing	9	5	14	3.42
1. Gas stove	7	5	12	2.93
2. Car exhaust	2	—	2	0.49
VI. Trauma	26	17	43	10.51
1. Jump from height	1	1	2	0.49
2. Cut throat	7	2	9	2.20
3. Cut brachial artery	1	—	1	0.24
4. Cut wrist	15	11	26	6.36
5. Cut face	—	2	2	0.49
6. Cut foot	1	—	1	0.24
7. Jump in front of moving vehicle	1	—	1	0.24
8. Jump from moving vehicle	—	1	1	0.24
VII. Drowning	—	—	—	—
VIII. Swallowing Metallic and Related Objects	9	2	11	2.69
1. Wire	5	—	5	1.22
2. Pins	3	—	3	0.73
3. Razor blades	1	1	2	0.49
4. Glass	—	1	1	0.24
Total (All methods)	161	248	409	100

9. Disposal of cases (Table II). Practically all cases were seen by a psychiatrist before discharge from hospital. The majority (41.0%) were sent home; usually they were advised to seek psychiatric aid if they had any further difficulties.

TABLE II. DISPOSAL OF CASES

Disposal	Number (female)	Number (male)	%
1. Home	79	59	40.95
2. R.H.T.	34	18	15.43
3. Psychiatric O.P.D.	38	21	17.51
4. Institution for alcoholics	1	3	1.19
5. Tara	18	8	7.72
6. Mental hospital	2	3	1.48
7. Refused psychiatric help	5	4	2.67
8. Private doctor	12	8	5.94
9. Absconded	1	2	0.89
10. Social welfare	3	1	1.19
11. Died	6	11	5.04
Total	199	138	100

337

Note: 1 case sent to Tara terminated while there from toxic effects of original poison (arsenic).

17.5% were referred to the psychiatric out-patient department. Many patients (15.4%) are recorded as refusing further hospital treatment after they had recovered from the immediate effects of their suicidal attempt; this figure is perhaps slightly erroneous, because some cases signed the R.H.T. (refused hospital treatment) form to protect the doctor when the patient requested discharge, usually for domestic reasons. 26 cases (7.72%) were referred to Tara Hospital for further psychiatric treatment; these were mainly cases with severe depression. Five cases (1.48%) were certified under the Mental Disorders Act and sent to mental hospitals.

(B) Suicides in Johannesburg Area

1. *Incidence.* During 1958 there were 141 suicide verdicts for the Johannesburg area at the Johannesburg Inquest Court: 107 were European, 32 Bantu and 2 Indian.

2. *Distribution over the year.* There was no significant difference between the different months of the year.

3. *Age and sex distribution* (Figs. 2 and 3). The greatest incidence of suicides occurred in the age group 34-38. Suicides were commoner in males than in females.

4. *Race* (Fig. 3). Suicide was less common in the Bantu than in the European in spite of the fact that the Bantu population was greater than the European. Suicide was rare in Bantu females; none occurred in Indian females.

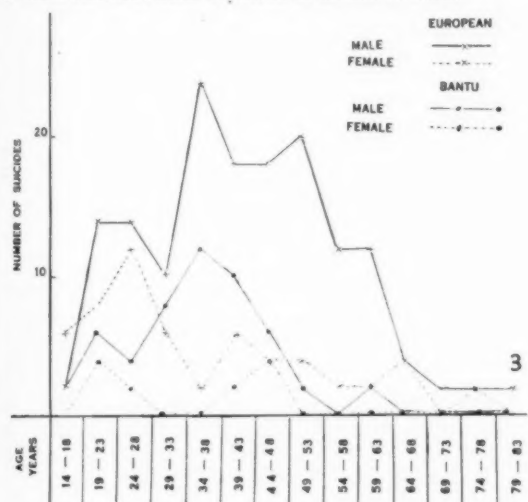


Fig. 3. Age and sex distribution of European and Bantu suicides in the Johannesburg area (1958).

5. *Methods* (Table III). There were significant differences in the methods used by the different races in committing

TABLE III. METHODS USED IN SUICIDE (1958)

(A) INDIAN

Method	Male	Female	Total	%
I. Poisons	2	—	2	100
1. Barbiturates	1	—	1	50
2. Phenol	1	—	1	50
II. Other methods	—	—	—	—
Total	2	—	2	100

(B) BANTU

Method	Male	Female	Total	%
I. Poisons	—	1	1	3.13
1. Ammonia	—	1	1	3.13
2. Other poisons	—	—	—	—
II. Hanging	20	2	22	68.75
III. Burning (fire)	1	2	3	9.38
IV. Gunshot	—	—	—	—
1. Head	1	—	1	3.13
2. Elsewhere	—	—	—	—
V. Gassing	—	—	—	—
1. Car exhaust	1	—	1	3.13
2. Other methods	—	—	—	—
VI. Trauma	3	1	4	12.50
1. Jump from height	1	1	2	6.25
2. Cut throat	1	—	1	3.13
3. Stab chest	1	—	1	3.13
VII. Drowning	—	—	—	—
Total	26	6	32	100

(C) EUROPEAN

Method	Male	Female	Total	%
I. Poisons	12	7	19	17.76
1. Arsenic	2	4	6	5.61
2. Barbiturate	4	2	6	5.61
3. Cyanide	3	—	3	2.80
4. Lysol	1	1	2	1.87
5. Parathion	1	—	1	0.93
6. Sodium fluoride	1	—	1	0.93
II. Hanging	9	1	10	9.35
III. Burning	—	—	—	—
IV. Gunshot	25	10	35	32.71
1. Head	21	8	29	27.10
2. Chest	3	1	4	3.74
3. Abdomen	1	1	2	1.87
V. Gassing	21	6	27	25.23
1. Gas stove	12	6	18	16.82
2. Car exhaust	9	—	9	8.41
VI. Trauma	10	4	14	13.10
1. Jump from height	4	4	8	7.48
2. Cut throat	2	—	2	1.87
3. Cut brachial artery	1	—	1	0.93
4. Jump in front of moving train	3	—	3	2.80
VII. Drowning	1	1	2	1.87
Total	78	29	107	100

1 European female used a combination of two methods, viz., gunshot abdomen and head.

suicide. The 2 Indian suicides were both by poison. In the Bantu the commonest method was by hanging (68.75%); only 1 case died from the effects of a poison, and 1 case shot

himself; 3 cases committed suicide by burning (fire). In Europeans the commonest method was by gunshot wounds (32.7%), especially of the head; gassing (25.2%) and poisons (17.8%) were also common methods. Hanging was not so common as in the Bantu (9.35%). Two Europeans died from suicide by drowning; this method was not used by the other races during 1958.

OTHER COUNTRIES AND TOWNS

1. Incidence

It is not surprising that much has been written about suicide and attempted suicide, when one realizes the magnitude of the problem throughout the world.

OTHER PARTS OF THE WORLD

It is difficult to determine the incidence of 'attempted suicide' because no satisfactory statistics are available. Many cases are not admitted to hospital and some are treated in private hospitals. National statistics for the incidence of suicide, however, are available. Table IV shows the suicide rate in certain countries for 1955, as published by WHO.^{20, 30} Of these, the countries with the highest incidence are Japan, Austria, Denmark, Switzerland and Finland. The highest incidence of all is recorded for West Berlin. The countries with the lowest rates are Mexico, Eire and Northern Ireland, and Israel (Jews)—in Malta and Gozo no suicides at all are recorded for 1954 and 1955. In South Africa the White suicide rate does not differ much from those of the USA and the UK. The Coloured rate (like the non-White rate in the USA) is much lower.

TABLE IV. COMPARATIVE SUICIDE RATES (WHO) PER 100,000 POPULATION OF EACH SEX (1955 UNLESS OTHERWISE STATED)

Country	Male	Female
Australia (excluding aboriginals)	15.1	5.4
Austria	33.0	15.0
Belgium	20.0	7.3
Canada	10.7	3.4
Denmark	32.4	14.8
Finland	32.4	8.5
France	24.7	7.8
Germany		
Federal Republic	26.0	13.0
West Berlin	43.6	27.3
Saarland	13.1	6.2
Hungary	28.6	13.1
Ireland	3.7	1.0
Ireland (Jews) (1954)	5.2	2.3
Italy	9.8	3.8
Japan	31.6	19.0
Malta and Gozo (1954 & 1955)	—	—
Mauritius	14.4	3.7
Mexico (1954)	1.7	0.5
Netherlands	7.5	4.6
New Zealand (excluding Maoris)	12.9	5.1
Norway	11.7	3.3
Portugal (and adjacent islands)	15.0	3.7
South Africa (1954)		
European	17.6	4.5
Asiatic	12.2	9.3
Coloured	3.8	1.5
Spain	9.1	2.9
Sweden	27.2	8.5
Switzerland	31.4	12.4
United Kingdom		
England and Wales	14.3	8.4
Scotland	9.6	5.9
N. Ireland	5.4	1.3
United States of America		
Total	16.0	4.6
White	17.2	4.9
Non-White	6.1	1.5

In the USA about 16,000 suicides are reported each year.³² In addition about 100,000 suicidal attempts are believed to occur annually in the USA.^{23, 4} In San Francisco from November 1956 to September 1957 there were 175 suicides and 197 admissions to the San Francisco City and County Hospital for suicidal attempts.¹⁷

In England and Wales during 1956 there were 5,262 suicides, the highest ever recorded.²⁰ During the same period there were 5,387 known attempted suicides.¹ In England and Wales, but not in Scotland, attempted suicide is still a criminal offence, but there were many attempted suicides of which the police had no record. During the calendar year 1957 a total of 44 attempted suicides arrived at Guy's Hospital and York Clinic.²⁸ Of these cases, together with 11 admitted to York Clinic in 1956 (55 cases in all), only 13 were known to the police.²⁸ In 1949 72 patients were admitted to the Bethlem Royal Hospital and Maudsley Hospital for attempted suicide.²⁵ The Glasgow Western Infirmary had 457 admissions for attempted suicide between 1937 and the end of the first quarter of 1953.¹²

The cases of attempted suicide admitted to Groote Schuur Hospital, Cape Town, between January 1947 and May 1950 numbered 252, consisting of 204 Europeans, 46 Coloured and 2 Natives.²⁷

In Sweden the annual number of deaths from suicide is about 1,300, which exceeds the number of deaths from street accidents. In 1953 there were 1,332 suicides, of which 195 occurred in Stockholm. Between January 1952 and May 1953 500 suicidal attempts were made by 457 patients admitted to Södersjukhuset, a municipal general hospital in Stockholm.⁵

2. *Time of admission to hospital.* The tendency for the majority of admissions for attempted suicide to occur at night has also been reported by others, e.g. for Guy's Hospital (London),²⁸ Södersjukhuset (Stockholm),⁵ Cincinnati General Hospital,¹⁹ and Detroit (USA).¹⁰

3. *Distribution over the year.* In the present series, suicides, and admissions to hospital for attempted suicide, occurred evenly throughout the year. McGeorge¹³ (1942) found in a series of 523 attempted suicides in Australia that the favourite season was the summer and the least favoured the spring. McKinlay¹⁴ gave figures for suicide in Scotland for the period 1911-1940 and found that the incidence was greater during spring and early summer. Swinscow²⁶ also found that in Britain the favourite season for committing suicide was clearly from spring to about midsummer.

4. *Distribution over the week.* As in the present series Ettlinger *et al.*,⁵ found no difference in distribution over the different days of the week in their Stockholm series of attempted suicide. Donalies,³ however, reported that Sunday was the commonest day for suicide and attempted suicide in Munich; and Moore,¹⁶ of Boston, and Lendrum,¹⁰ of Detroit, reported high incidences on Sundays and also, for females, on Wednesdays.

TYPES OF SUICIDAL PATIENTS

Suicide is a danger in all types of depressions. This includes manic-depressive psychoses, endogenous depressions, organic depressions, reactive depressions, involutional melancholia, and psychoneurotic depressions. In manic-depressive psychosis, when the patient is severely depressed, psychomotor retardation is common and suicide is rare. In the convalescent

phase, when the retardation is less severe, the patient presents a greater suicidal threat.

Suicide is not uncommon in schizophrenia. It is commoner in the paranoid group than in the others.⁷ In these cases the attempts at self-destruction are often brutal and horrifying. The suicidal attempt may be prompted by hallucinations or by bizarre delusional ideas.

In the psychoneuroses suicide is rare. It is, however, possible in acute anxiety states when the anxiety reaches panic proportions.⁷ In hysterical personalities suicidal attempts are usually attention-seeking devices, in which the patient has no serious intent to terminate life. These persons may use the shock of a suicide gesture to control their environment, to gain attention, to arouse sympathy, to frighten others into submission, or to dramatize themselves.¹⁵ The action often reflects a child fantasy, 'When I am dead you will be sorry'.

The possibility of a rational suicide has been much debated.¹⁶ Rational suicide may be defined as a suicide in a well-integrated, mature person under the burden of a massive, objectively irremediable misfortune, after calm reflection. Many authors feel that any type of suicide is a pathological act, but Oliven¹⁸ considers that judgment on this point may well hinge on the observer's definition of psychic normality and on the cultural setting and background of tradition in which the act occurs. For example, suicide was reportedly the expected normal step in the Imperial Japanese Army after failure to carry out an assigned task, or in the old Prussian Officer Corps after transgression against the honour code. 'Rational' suicides are most frequently to be expected in patients with incurable or severely painful afflictions.

Delirium from any cause may lead to suicide in response to extreme apprehension and confused ideas of persecution, often during a lucid period.¹¹

Alcoholism is frequently a feature of suicidal individuals, but it is probably not a direct cause of suicide, with the possible exception of acute alcoholic hallucinosis, in the course of which terrifying hallucinations and ideas of persecution may drive the patient into a suicidal panic.

COMPARISON OF SUICIDE AND ATTEMPTED SUICIDE

The present study shows certain differences between the patients who entered the Johannesburg Hospital for 'attempted suicide' and survived and those who died from suicide. 'Attempted suicide' was commoner in females and the peak incidence occurred in the age-group 19 - 23. Suicide on the other hand was commoner in males and most frequent between 34 and 38. The methods employed in 'attempted suicide' and suicide also differed considerably. Ingestion of 'poisons' was by far the commonest method employed in 'attempting suicide' (82.6%); it was much less common in European suicide (17.8%). The 'poisons' used also differed. Gunshot wounds were common in suicides but uncommon in 'attempted suicide'. Similar differences between suicide and attempted suicide have been found by others.²⁶

The existence of differences between suicide and 'attempted suicide' has lead one to wonder what the relationship is. Are all cases of 'attempted suicide' really persons who wished to terminate their lives? Did they fail only because their methods were inadequate and because they were fortunate enough to receive medical aid?

Studies have shown that only a small minority of those who have committed suicide have made a previous suicidal

attempt. Sainsbury's figure for North London (1936 - 38) was 9%,²¹ and in Stengel and Cook's studies the figure was 13%.²⁵

In order to find out how many of those who attempt suicide finally kill themselves, 138 cases of attempted suicide admitted to a London mental observation ward in one year (1946 - 47) were followed up 5 years later; 35 patients were found to be dead, of whom only 1 had killed himself, 18 were in mental hospitals, 5 were untraced, and the rest were out of hospital.²⁴ In 1949 72 patients were admitted to the Bethlem Royal Hospital and Maudsley Hospital because of attempted suicide; when followed up 3 years later only 2 of them had killed themselves.²⁵ In Sweden, Dahlgren² found that of 230 people who attempted suicide 6% killed themselves in 4 years. Hove⁸ followed up 500 attempted suicides treated at the poisoning unit of Bispebjerg Hospital, Copenhagen; after 2 - 3 years 94% of the patients were still alive, 5% had committed suicide, and 1% had died of other causes. It appears that only a small proportion of those who attempt suicide finally kill themselves.

The fact that suicidal deaths are more numerous in males than in females has been attributed by some to the fact that men more often resort to violent methods. In their series, however, Ettlinger *et al.*⁵ could not find a correlation between the sex or age distribution and the methods used.

The above evidence suggests that 'suicide' and 'attempted suicide' are two different symptoms of psychological maladjustment, although there is probably a certain amount of overlap in the two conditions.

Many people apparently attempt suicide although they do not wish to die. Lennard-Jones *et al.*⁹ recently subdivided apparent suicide actions into 3 classes, viz. (1) the serious class, those who really intended to kill themselves, (2) the doubtful cases, those who tried for death but clung on to life, and (3) spurious suicidal cases those who never meant to kill themselves (the 'pseudocide' group). In 34 consecutive patients in the general wards of a hospital in London they classified 12 of the attempts as serious 9 as doubtful and 13 as spurious.

The 'attempted suicide' group appears to be made up largely of the hysterical personalities who attempt suicide as a form of mental blackmail. In this group fatal accidents are apt to occur. They may for example inadvertently take an overdose of a 'real poison' miscalculate the arrival of someone to turn off the gas stove or lean too far out of the window. Such cases might be called 'unsuccessful attempted suicide' since their aim was attention seeking and not self-destruction. The 'attempted suicide' group also contains people who failed in a genuine suicidal attempt. Failing in a serious suicidal attempt they often deny the true intention; occasionally they maintain that they took poison 'accidentally'.

DIAGNOSIS OF SUICIDAL PATIENT

A major psychiatric emergency is the prevention of suicide and hence it is important to differentiate a suicidal patient from a hysterical personality attempting to seek attention. Contrary to a popular belief that a truly suicidal person 'just goes ahead and does it' it is estimated that as many as 40% talk about their intent beforehand,⁶ though in many instances this can only be established through careful enquiry.²⁵ Such talk may range from melodramatic threats to matter-of-fact statements. The finding of a discarded farewell or other suicidal letter should serve as a warning

symptom and, if the subject is an adult in a state of depression, such notes must be regarded with pessimism, no matter how convincingly the patient explains them away.¹⁸ Suicidal notes are rarely written by hysterical patients. Patients who have recently recovered from a serious depression must be treated with suspicion, for suicide not infrequently occurs at that stage. Potentially dangerous methods should be regarded seriously, and apparently trivial methods are not always to be taken lightly, especially in cases of low intelligence.

Cruel and bizarre methods, such as slitting throat from ear to ear, lying in front of steamroller, igniting self, thrusting red-hot poker down throat,^{15, 16} are usually evidence of dangerous psychopathology and are hardly ever 'hysterical'. It is usually in serious psychoses that the swallowing of foreign bodies (glass, nails, etc.) takes place and, even though it may be ineffectual, it cannot be called trivial. Oliven¹⁸ considers multiple means, such as poison plus hanging, or sleeping tablets plus drowning, always to be evidence of a serious attempt. When the patient is questioned about suicidal thoughts, an outburst of anger or indignation or an increase in agitation or self-accusation is significant. Reading about death, despair and doom, and also carelessness about personal appearance in dress and bodily hygiene, especially of recent origin, are indicators of potential suicide.⁷

'Accidental' poisoning may be hard to differentiate from attempted suicide. It is not uncommon for a patient who fails in a genuine suicidal attempt to state that the poison was taken accidentally. There may be psychiatric reasons for the accidental taking of poisons; for example, it may occur while the patient is in a toxic confused state. Some observers feel that in all accidental poisoning an underlying (subconscious or unconscious) suicidal impulse can be found.

In addition to 'accidental' poisons many other so-called traumatic accidents (e.g. car accidents) are really attempts at suicide. It might be advisable for psychiatric opinion to be obtained in all such cases, especially where the patient was the driver of the vehicle.

SUMMARY

1. The 358 attempted-suicide admissions to the Johannesburg General Hospital for 1958, and the 141 suicides which took place in the Johannesburg area during the same period, are reviewed.

THE DOCTOR AS TEACHER — HIS PRACTICAL PROBLEMS

J. H. ABRAMSON, B.Sc., M.B., B.Ch. (RAND), *Department of Social, Preventive and Family Medicine, University of Natal, and Institute of Family and Community Health, Durban*

There is a growing awareness of the importance of the doctor's educational function, both in curative and in preventive or promotive work.¹⁻¹⁴ An explanation of the nature, causes and treatment of an illness may be a most important means towards improving the patient's prognosis¹⁵ or preventing contagion. To the doctor who concerns himself with promoting his patient's future health, health education is an essential technique. With our growing understanding of the relationship between health and patterns of daily living, it becomes increasingly apparent that, to a considerable extent, the adult's health is in his own hands, and the child's in his parents'. The general practitioner, in particular, has a special obligation and a unique opportunity to modify his patients' habits of behaving, thinking, and feeling. The BMA Committee on General Practice stated: 'No one else is in so advantageous a position to give advice on the maintenance of health, the principles of healthy living and the prevention of disease. The family doctor is welcomed into the homes of his

2. The problem of suicide and attempted suicide in Johannesburg is similar to that found elsewhere.

3. Evidence is presented to support the hypothesis that 'suicide' and 'attempted suicide' are two different symptoms of psychological maladjustment, although there is probably a certain amount of overlap in the two conditions.

4. The types of suicidal patients are discussed.

5. Certain aspects in the diagnosis of a suicidal patient are discussed.

I wish to thank Dr. K. F. T. Mills, Superintendent, Johannesburg General Hospital, and Mr. F. C. Silk, Chief Magistrate, Johannesburg, for permission to publish; Prof. L. A. Hurst and Dr. T. E. Lynch for encouragement and advice; Mr. A. M. Shevitz for photographing Figs. 1-3; and Miss F. Tokor for helping in the collection of data from the inquest-court files.

REFERENCES

1. Criminal Statistics, England and Wales (1956). Quoted by Woodside, *loc. cit.*²⁰
2. Dahlgren, K. G. (1956): *On Suicide and Attempted Suicide*. Sweden: Lindstedts.
3. Donalies, G. (1928): *Msehr. Psychiat. Neurol.*, **69**, 380. Quoted by Ettlinger *et al.*, *loc. cit.*⁷
4. Dublin, L. L. and Bunzel, B. (1933): *To be or not to be: A Study of Suicide*. New York: Harrison, Smith & Haas. Quoted by Oliven, *loc. cit.*¹⁸
5. Ettlinger, R. W. and Flordh, P. (1955): *Acta psychiat. (Kbh.)*, suppl. 103: 1.
6. Fairbank, R. E. (1932): *J. Amer. Med. Assoc.*, **98**, 1711.
7. Friel, P. B. and Frank, L. W. (1958): *Ann. Intern. Med.*, **49**, 632.
8. Hove, H. (1953): *Ugeskr. Læg.*, **115**, 645. Quoted by Ettlinger *et al.*, *loc. cit.*⁵
9. Lennard-Jones, J. E. and Asher, P. (1959): *Lancet*, **1**, 1138.
10. Lendrum, F. C. (1933): *Amer. J. Psychiat.*, **13**, 479.
11. Levine, M. (1942): *Psychotherapy in Medical Practice*. New York: Macmillan.
12. Lowther, C. P. (1959): *Scot. Med. J.*, **4**, 163.
13. McGeorge, J. (1942): *Med. J. Austral.*, **1**, 67.
14. McKinlay, P. L. (1948): *Hlth Bull. (Edinb.)*, **6**, 29. Quoted by Swinscow, *loc. cit.*²⁰
15. Menninger, K. A. (1933): *Int. J. Psychoanal.*, **14**, 376.
16. Moore, M. (1937): *New Engl. J. Med.*, **217**, 291.
17. Motto, J. A. and Greene, C. (1958): *A.M.A. Arch. Neurol. Psychiat.*, **80**, 776.
18. Oliven, J. F. (1951): *New Engl. J. Med.*, **245**, 488.
19. Piker, P. (1938): *Amer. J. Psychiat.*, **95**, 97.
20. Registrar-General (1956): *Statistical Review, England & Wales*. London: H.M. Stationery Office. Quoted by Woodside, *loc. cit.*²⁰
21. Sainsbury, P. (1955): *Suicide in London. An Ecological Study*. London: Chapman & Hall.
22. Simon, C. (1948): *Problem of Suicide* (Quoting the US Health Service) International Association, Chief of Police, New York Meeting. Quoted by Oliven, *loc. cit.*¹⁸
23. *Idem* (1948): *Problem of Suicide* (Quoting Metropolitan Life Insurance Company) International Association, Chief of Police, New York meeting. Quoted by Oliven, *loc. cit.*¹⁸
24. Stengel, E. (1952): *Proc. Roy. Soc. Med.*, **45**, 613.
25. Stengel, E. and Cook, N. G. (1954): *J. Forensic Med.*, **1**, 252.
26. Swinscow, D. (1951): *Brit. Med. J.*, **1**, 1417.
27. Walton, H. (1950): *S. Afr. Med. J.*, **24**, 933.
28. Woodside, M. (1958): *Brit. Med. J.*, **2**, 411.
29. World Health Organization. (1958): *Annual Epidemiological and Vital Statistics for 1955*. Geneva: World Health Organization.
30. *Idem* (1957): *Ibid.* for 1954.

patients; he knows their circumstances, and their jobs, the family problems and responsibilities; thus many opportunities for health education will occur in the home, in the surgery and at the special sessions which many general practitioners hold for antenatal examinations, nursing mothers and infant welfare.¹⁶

Some practitioners are in fact active health educators. A recent study of the working week of 41 selected Washington physicians revealed that, on the average, 19% of their working time was spent on health education, and a further 7% on 'counselling'.¹⁷ Likewise, 50% of British general practitioners stated, in their replies to a questionnaire, that they took a real interest in this aspect of their practice.¹⁸ The picture should not, however, be overpainted; many doctors pay little attention to this side of their work. The same British study indicated that 43% of general practitioners, though they gave advice on inoculations when asked, took no very positive steps in the matter of health education. Hadfield, in his study of British general practitioners, found

that on G.P. is in his 1,073 "College interested featured by an in quality of our c The r festly v in the practical clearer solution

A patie influx c educatio said: "P they reg noticed and the and othe Similarl indicate informa physicia of infor sultation to the at any i an inve appear fundam of their in a US portant the pati Clear interest beyond changes and not neede-p the solu their ex approac medical ing the what th function expect a training

DIAG Not on also ca modate contrar derived these m able in true mu to effor died of think th this bel tion ma patient chest p disease minister handlin the pati illness

that only 9% were 'enthusiasts' about health education.¹⁹ 'The G.P. is apt to smile at himself as a health educator', said Taylor in his report on the Nuffield study of general practice.²⁰ Among 1,073 "doctors' interests" submitted by British members of the College of General Practitioners as topics on which they were interested in conducting research, 'education of the patient' featured only 5 times.²¹ It is probably true that in South Africa, by and large, health education of patients falls far short, both in quality and quantity, of what is required to improve the health of our disease-ridden population.

The reason for this neglect to make full use of such a manifestly valuable medical procedure probably lies, at least partly, in the difficulties which its application presents. Some of these practical problems will be discussed below, in the hope that a clearer realization of their nature may point the way to possible solutions.

THE PATIENT'S EXPECTATIONS

A patient cannot be regarded as an open vessel, awaiting an influx of instruction. Many patients expect very little health education from their doctors. Hadfield, reporting on his survey, said: 'Patients are not, as a rule, receptive to positive instruction; they regard it as preaching and treat it with suspicion. I often noticed that when the doctor's remarks veered from the symptoms and the pills to such things as open windows, suitable clothing, and other precautions a curious blank look came over their faces'.¹⁹ Similarly, a study of medical out-patients at a New York hospital indicated that they did not expect their doctors to provide the information they wanted.²² When asked to characterize a good physician, few of these patients mentioned that the type or extent of information the doctor gave was relevant. During their consultations, they 'seldom made forceful demands for information to the physician. One third made no request for information at any time.' Yet when these same patients were interviewed by an investigator immediately after their consultations, it was apparent that most of them wanted information about some fundamental aspects of their condition. What patients expect of their doctors may, however, vary considerably. When patients in a US tuberculosis sanatorium were asked what the most important quality was for a physician to have, 57% said, 'To keep the patient informed'.²²

Clearly, these considerations pose problems for the doctor interested in patient education, particularly if his interest extends beyond the mere giving of information to the production of changes in living habits. The patient may want information and not ask for it, or may want only a bottle of medicine or a needle-prick, and resist any treatment going beyond this. Partly, the solution to these problems lies in the doctor's awareness of their existence in the individual case, so that he can modify his approach accordingly. Partly, it lies in long-term efforts by the medical profession to modify patients' expectations by accustoming them to this kind of management. People tend to expect what they have been used to. In Balint's words: 'By their apostolic function doctors train the population from childhood what to expect and what not to expect when they go to the doctor's. This training, though very efficient, is not unalterable'.²³

DIAGNOSING THE PATIENT'S 'EDUCATIONAL CONDITION'

Not only cannot the patient be regarded as an open vessel, he also cannot be considered as a vacant vessel, ready to accommodate whatever the doctor wishes to instil into him. On the contrary, each individual has his own set of beliefs and practices, derived from his experiences within his culture. However wrong these may appear to an outsider, they are no less right and reasonable in his own eyes. What a patient knows or suspects to be true must influence both his educational needs, and his response to efforts at health education. The patient whose best friend died of a stroke shortly after developing a severe headache, may think that his own headaches herald impending death. Though this belief may not be readily voiced to his doctor, its modification may constitute an important part of his therapy. The Zulu patient who knows or suspects that his cough, haemoptysis, chest pain and weight loss are symptoms of *isifuba sedliso*, a disease produced by the unwitting ingestion of a substance administered by an ill-wisher,²⁴ obviously requires very different handling, in his own interests and in those of his contacts, from the patient who knows that he is suffering from a germ-produced illness called tuberculosis.

It is thus important, as a preliminary to educational 'treatment', to probe the patient's knowledge and practices, and make a diagnosis of his 'educational condition'.¹ This, however, requires a conscious effort, and may not be easy. One New York study has indicated the inaccuracy of physicians in their estimates of the level of medical knowledge of the patients attending a hospital clinic.²⁵ Only to a limited extent can the doctor assume that the patient is a typical representative of his culture, and that he shares the beliefs and practices known to be widespread in his community. There may be much individual variation within a culture. A London physician, for example, may assume that his tuberculous patients and their relatives are aware of the infectious nature of this disease. Yet in a recent study of public opinion, only 66% of a representative London sample stated that they thought that tuberculosis was 'catching'.²⁶ One Zulu patient may know he has tuberculosis and another that he has *isifuba sedliso*; and a third may believe that both these explanations are feasible.

The educational diagnosis, intrinsically a difficult one, becomes even more difficult when doctor and patient live, as often they do, in different 'worlds'. Commonly, the doctor is of a higher social status than his patient. Norms and practices may vary considerably in different social classes,²⁷ and the doctor may be relatively unaware of the patterns of thinking or behaviour common in the patient's social class. This problem of 'social distance' is intensified in a multicultural society such as ours, where what is natural to the patient may be completely foreign to the physician. Many patients, for example, believe strongly in witchcraft. Only 18 of 50 African mothers whose babies had been admitted to a Durban hospital for gastro-enteritis ascribed their child's illness to natural causes, while 12 blamed supernatural causes, and 20 'did not know'.²⁸ Doctor and patient may often find themselves separated by a chasm which neither of them is easily able or, sometimes, willing to bridge.

Such considerations assume even greater importance when the doctor seeks to probe, as he must if he is to be an effective health educator, into the meaning of his patient's behaviour. What are the attitudes and values on which it is based, what are the patient's motivations? Twice-daily enemas may be deemed harmful to a baby; but before attempting to modify this practice it is as well to know that in the eyes of the mother, as of many Zulu mothers, this procedure may be essential for the infant's well-being.²⁹ 'Dr. Samuel Darling, a malarologist who worked on the Panama Canal project, once remarked, "If you wish to control mosquitoes you must learn to think like a mosquito". This advice applies not only to mosquito populations one seeks to damage, but also to human populations one hopes to benefit. If one wishes to help a community improve its health, one must learn to think like the people of that community. Before teaching people new health habits, it is wise to learn the existing habits, how these are linked to each other, what functions they perform, and what they mean to those who practise them'.³⁰ Such knowledge is not acquired without effort.

THE PATIENT'S EDUCABILITY

A host of factors may limit the patient's educability, or capacity for change. His circumstances, his personality, his fears, values and beliefs, his feelings towards the doctor, the views of his friends and family—all these and more may militate against educational success, however capable the physician. Discouragements aplenty are met by the doctor who believes that changed behaviour patterns will improve his patient's health. It may not be practicable to advise an impoverished man to improve his diet; or to tell an impoverished mother to give up her employment, although her absence is impairing her child's health. The patient with a long-term illness, seeing no dramatic improvement with treatment, may become convinced that his illness is a consequence of 'tricking' or bewitchment, and abandon his therapeutic regimen. The diabetic patient, 'wishfully thinking' that her freedom from symptoms means that her illness has left her, may give up her dietary restrictions or insulin injections. Anxious to 'live up to the Joneses', the malnourished family may prefer a new radiogram to extra milk and fruit. The obese Zulu woman may feel at heart, in common with her family and community, that the fuller figure is a thing to be valued—beautiful in itself and material evidence of health and prosperity. Not surprisingly, attempts to reduce her weight may meet with little success. The father of a tuberculous girl, temperamentally inflexible and convinced that prayer

or supernatural help is the right treatment for her condition, may refuse to send her to hospital in spite of her manifest deterioration. A patient given advice she believes to be wrong may completely ignore it, even though at the time, possibly out of politeness to the doctor, she may indicate her complete acquiescence. Such examples could be multiplied indefinitely.

Of particular interest is the effect of the patient's illness on his educability. The successful treatment of an illness may, by its effect on the patient-doctor relationship, greatly facilitate patient education. It has been stressed that, in 'underdeveloped' areas particularly (a term which must include the major part of our country), health education, which is 'the chief function of a medical service' in such areas, 'must be accompanied by treatment of illness whenever treatment is necessary'.³¹ On the other hand, illness itself probably constitutes a barrier to learning. The anxious patient is prone to mis-hear, misinterpret, and forget. Eager to be helped by an expert in whom he has faith, the ill patient may gladly but uncritically and submissively follow 'doctor's orders', only to abandon them when he feels that his health is restored. In Steuart's words: 'Once he has had his complaint labelled and has been told to take a tablet at certain times, to change his diet, or to rest more often, this may mean little more to him than the anxiety-relieving rituals of magic to a primitive. Thus, with the physician in an active dominating role and the patient in a passive dependent one, we have a contradiction of the best educational situations where the learner actively and intelligently participates in solving his own problems and meeting his own needs. Moreover, the somewhat undignified dependence of the patient often means that, as he recovers and his feeling of independence is restored, while gaining a greater respect for himself, he tends to lose it for his regimen. It is therefore not uncommon to find the patient, in his final stages of recovery, avoiding desirable contact with his doctor and neglecting the advice he received. The result is that considerable numbers of patients resume their daily rounds as before'.³²

The 'health examination' may be a useful answer to this problem. Such an examination may be made to comprise, not only an opportunity for a 'medical check', but also a valuable learning situation. This procedure is fortunately gaining in popularity. A recent US survey showed that, on the average, 54% of paediatricians' consultations were for health supervision rather than the care of ill children, and that 30% of the services rendered to children by general practitioners were for the health supervision of 'well' children.³³

POSSIBLE HARMFUL EFFECTS

Much concern has been expressed about the possible harmful effects of ill-considered health education of the public or, as it has been termed, 'health miseducation',³² or 'public education in disease'.³⁴ As has been pointed out,³⁵ false hopes may be raised and false fears induced, or fears may be produced which, though well justified, may impair health. For example, awareness that a lump in the breast may be evidence of cancer, may be an important cause of delay in seeking medical advice.³⁴

Similarly with the individual patient, ill-considered health education may have harmful effects. A prediction of its likely effects may require considerable clinical skill. For example, the question of 'what to tell the patient' about his diagnosis and prognosis is a thorny one, and must be answered anew for each patient.³⁶ Even when the doctor can accompany his frightening diagnosis with suggestions for a regimen which will minimize the patient's danger, he may still fear that it will harm his patient. 'The general practitioner, who, above all other doctors, has to do the explaining, is, not unreasonably, afraid that, in preventing a coronary thrombosis, he may only induce a psychoneurosis. Of what use is it to a man to live ten years longer if, during every day and night of that ten years, he feels his pulse, counts his respirations, and lives in fear of sudden death?'³⁷ The possibility of iatrogenic disease is always present.

Unwittingly or unthinkingly, too, the doctor may raise harmful fears. The suggestion that heart disease may be present, for example, may aggravate the symptoms of a patient with neuro-circulatory asthenia.³⁸ Such fears may find their basis in the doctor's manner, in his silences, or in his use of expressions which have a fearful connotation to the patient. A number of commonly used medical terms may arouse considerable anxiety among patients.³⁷ To the doctor, 'tonsillitis' may connote a healthy response to infection; to the patient, it may portend a surgical

operation. Patients' interpretations may be markedly influenced by cultural factors. While one patient may find it reassuring to be told that his pains are 'only rheumatic', another, brought up in a different culture, may regard 'rheumatics' as a dangerous and often fatal disorder. The explanation given to a patient with urticaria that it is 'something he has eaten' may serve to confirm his own suspicion that he has been bewitched by poisoning, and that he is in fact gravely ill.

Education of the patient may prove disturbing, not only to the patient, but also to the doctor. It is sometimes questionable, for example, whether it is to spare the patient from pain that unpleasant facts are concealed, or to spare the doctor. Furthermore, the process of patient education may involve threats to the doctor's self-esteem. It may be hard to reconcile an explanatory, suggestive approach, a respect for the patient's views, and a readiness to discuss pros and cons, with a doctor's conception of himself as an authoritative expert. The frequent need to admit doubt or ignorance may further threaten the doctor's self-respect. If a doctor is prepared to sit down and talk with his patient, the need for it must often arise. Medical knowledge is limited—witness the uncertainties and fluctuations of fashion in infant feeding—and the knowledge of the individual doctor is even more restricted. There are few physicians who cannot be 'floored' by a patient who regularly reads the popular digests. In the face of these difficulties, many doctors may prefer to limit the opportunities for such exposure of their ignorance.

WHAT WILL BENEFIT THE PATIENT?

It may be far from easy to define the educational goals for a particular patient. For example, the mere fact that a belief is false, or probably false, does not mean that it must needs be changed. If a mother believes that tooth-grinding is always a symptom of 'worms', is this belief harmful, even if it is false? If she believes that 'roundworms are caused by eating too many sweets', is it necessary to deny this possibly beneficial belief, and perhaps arouse the patient's resistance? May it not be preferable to explain that the prime cause is the ingestion of faecal material—an essential piece of knowledge if she is to take intelligent steps to prevent reinfection—while being non-committal about the possible relationship between sweet consumption and the growth of the worm once it has entered the body? If a woman believes that because she has been bewitched her breast-milk is causing her baby's illness, should she be persuaded, against her better judgment, to continue breast-feeding? What will be the effect of her self-blame should the baby die? May unacceptable or unrealistic advice not do more harm than good? Should she be told that she is not bewitched? Or should she be advised to continue being treated by her witch-doctor, in order to relieve her anxiety?

Sometimes such decisions may present extraordinary difficulty. A 31-year-old Zulu woman ascribed her numerous neurotic symptoms to 'high blood pressure', from which a doctor had told her she suffered. She believed that this high blood pressure was an effect of the premature cessation of her menses 5 years previously, after 6 years of childless marriage. Her early menopause, in turn, had been supernaturally caused by an unknown ill-wisher, jealous of her marriage. Basically, her symptoms were probably expressions of her frustrated wish for a child and her fear of losing her husband's affections. Her explanation, quite rational in her own eyes, was defective in her doctor's. But what modifications in her understanding of her condition would help her? This question cannot be glibly answered.

The task of defining the educational objectives is often further complicated by the introduction of an irrational element. Inevitably, the doctor is influenced by his own attitudes, motivations and assumptions, which may markedly influence his care programme. Two thorny examples illustrate this point: Faced with a promiscuous youth with gonorrhoea, does his doctor advise him to use condoms, in order to reduce the risk of reinfection? Or with an unmarried mother of three children, fathered by three different men, does he advise her to use a contraceptive? And if not, is he motivated by consideration for his patients' welfare, or by his own moral standards?

EDUCATIONAL TECHNIQUE

'It is unthinkable', it has been said, 'that when attending a tubercular patient the physician should fail to educate both his patient and the family'.³⁹ It is probable that in such circumstances most doctors do in fact discuss the methods of spread of the disease,

in order to
study of p
ness that
persons w
among oth
that the te
may requi
It may
Concepts
simple to t
terms. Pa
preyer may
one, may
to impart
study⁴⁰ it
that smok
theless—cl
a change i
Thousands
infants, be
concerned
mouth, w
tap water
of its rati
What p
what they
health ed
and health
nothing a
if you can
the Sailor
might, lik
doctor ha
patient's
changed h
of his goa
can to de
than is a
tunities fo
context h
and expro
aim, too,
not felt.
so to equ
intelligen
and the l
mean clin
Skill ap
often has
our patie
a general
problem.
that their
give adeq
skill in p
it is like
which no
for many
The u
mothers
lem. Gro
studies h
more eff
the way
mation c
health e
hospitali
the doct
group) a
it requir
tions.
group di
By and
efficient

in order to reduce the chance of contagion. Yet in the London study of public opinion cited above it was found that an awareness that the disease was infectious was no commoner among persons with experience of tuberculosis in their families than among other persons.²⁸ This finding bears testimony to the fact that the technique of patient education, or educational 'therapy', may require considerable skill.

It may not be easy to transmit information to the patient.¹⁴ Concepts that appear simple to the physician may be far from simple to the patient, and may be difficult to explain in intelligible terms. Particularly in a polyglot society such as ours, an interpreter may be needed who, by 'interpreting' in more senses than one, may distort more than she translates. Moreover, merely to impart information is not enough. In a recent Edinburgh study²⁹ it was found that no fewer than 45% of smokers believed that smokers were more likely to get cancer, but smoked nevertheless—clear evidence that information alone may not produce a change in habits. Similarly, 'advice' alone may be insufficient. Thousands of South African mothers boil tap water for their infants, because they have been advised to do so, but are little concerned about the flies which settle on the teat or the baby's mouth, which are far likelier to infect the infant than unboiled tap water is. They have been given advice, but not an awareness of its rationale.

What people do, depends not solely on what they know or what they are told, but on what they want. To be successful, health education must be founded on the patient's real-life goals—and health may or may not be one of these. 'The boy of six cares nothing about calcium and its relation to bone structure. But if you can promise that he will be as big and strong as Popeye the Sailor—if but he eats spinach—spinach he will eat. And . . . why? So that he might be healthy? Hardly! But so that he might, like Popeye—be powerful and unconquerable.'³⁰ The doctor has the difficult task of learning something about his patient's motivations, and of helping the patient to learn how changed behaviour may be able to contribute to the achievement of his goals.³⁰ What is needed, Steuart has said, is: 'for the physician to develop and exploit a more psychiatric type of relationship than is at present current. This would include greater opportunities for self-expression by the patient. . . . In such a clinical context his guidance could be more closely related to the felt and expressed needs of the patient.'³¹ 'Health education . . . must aim, too, to stimulate to a conscious level those needs which are not felt.'³¹ In the last resort, the purpose of health education is so to equip and motivate the patient that he is enabled to make intelligent personal decisions which will improve his health and the health of those whom he affects. This may require no mean clinical skill.

Skill apart, it requires time—a commodity of which the doctor often has little to spare. 'Above all we must have time to allow our patients to talk to us—and time is one thing we lack,' says a general practitioner.⁴² This is in many cases a very real practical problem. It is found by 41% of British general practitioners that their load is such that it is difficult or impossible for them to give adequate care to their patients.⁴³ To an extent, practice and skill in patient education may reduce the time requirement. But it is likely that under present conditions the problem of time, which not only comes into health education but also into many other aspects of good clinical practice, will remain a difficulty for many practitioners.

The use of group discussions—for example, for expectant mothers or diabetics or obese patients—partly answers this problem. Group education is both economical and effective. Follow-up studies have shown that group discussions may be considerably more effective than individual sessions in producing changes in the way mothers feed their infants.⁴⁴ Naish found that the formation of parents' clubs among her patients, and their use for health education, contributed to a reduction in the unnecessary hospitalization of children.⁴⁵ The use of groups, however, presents the doctor with new difficulties. First, groups (except the family group) are not ready made, but have to be organized. Secondly, it requires considerable skill to make effective use of group situations. Lectures have little educational value, while to lead a group discussion, which has much, requires training and practice.⁴⁶

POSSIBLE SOLUTIONS

By and large, the doctor of today does not appear to be a very efficient health educator—witness a New York study which showed

that persons who had had a disease tended to have little more knowledge about the disease than persons who had not.⁴⁷ To a considerable degree, the doctor's difficulties in health education are produced or aggravated by his own lack of motivation or ability as an educator. Few of us have had the privilege of an adequate undergraduate training in this clinical skill.

Clearly then, better training of the doctor for this function must go a considerable way towards meeting the difficulties which have been discussed. A doctor equipped by his theoretical and practical training with the ability to diagnose his patients' 'educational condition' and the motivation and skill to carry out health education, must be more effective as a teacher, not only of his patients, but also of the public. Both postgraduate instruction in health education, which may be impracticable on any large scale, and undergraduate courses, which are easier of achievement, have been advocated.^{3,48} A growing number of medical schools, among them that of the University of Natal,⁴⁹ are providing formal instruction in health education.

But for many of us it is still necessary to find our own solutions. The references cited in this article include many helpful suggestions. By schooling ourselves, for example, to find out what the patient ascribes his illness to, we may gain a keener appreciation of the educational problem. By feeling and showing an interest in our patients' views, we can augment our effectiveness as teachers. By using charts, models and other visual aids,⁵ we can make what we say more easily intelligible; and by asking the requisite questions we can make sure that we have in fact been understood. By a less didactic approach, we may produce more lasting changes. If we are aware of our shortcomings and difficulties many of the solutions will follow automatically.

Whatever can be done to reinforce the continuity of the patient-doctor relationship will improve our chances of success. If we can see our patients when they are well as well as when they are ill, this will provide us with extra opportunities. Prepaid medical schemes, because they facilitate health examinations, may be particularly useful media for effective patient education.⁵⁰

Similarly, if our contact with the whole family can be improved, so may the success of our teaching. Family members profoundly affect one another's ideas, habits and health, and the family is a most important educational unit. The hospital doctor who seeks out his patients' relatives, or the family doctor who establishes a good relationship with all the members of his families, improves his chances of success.

Even the time problem may be lessened, if not removed, by the judicious use of appointments or other control systems,^{20,51,52} and by the careful planning of a record system.^{20,53} With the help of a nurse in the practice, considerable time may be saved;^{20,54} a nurse trained in educational method may in fact be able to augment considerably the doctor's own efforts.^{55,56}

Of particular value is the potential contribution of the professional health educator, either supplementing the doctor's work among his patients, or working in the community at large. Such personnel could play a valuable role, for example, in the slowly growing health-education activities of hospitals and clinics.⁵⁷⁻⁶² In one experimental project at a Durban hospital, trained health educators organized group discussions among women in-patients whose homes were in one of the city's worst slum areas. Visits to the patients' homes while they were still in hospital, and again a month after their discharge, revealed significant improvements in refuse disposal, fly control, the storage of food and water, and the consumption of milk.⁶³

Trained health educators can produce valuable improvements in a community's living habits and health. A number of reports have dealt with such work among White, African and Indian populations in South Africa.^{7,44-67} Community health education of this sort is not directly concerned with meeting the particular educational needs of individual patients, but aims at promoting healthful living in the community at large. By increasing basic biological knowledge in a neighbourhood, by encouraging the population to make fuller use of its medical facilities and other resources, by stimulating group action in the interests of health, and by modifying unhealthy practices, such programmes provide a valuable background to the physician's efforts with his own patients. For example, in certain South African communities it is believed that brown bread is inferior, or that thin cereal gruels or sweetened condensed milk are adequate substitutes for breast-milk, or that haematuria is less a symptom of disease than a necessary stage on the road towards manhood. Where such beliefs

are widespread, it is difficult for the doctor to persuade his individual patients to take action counter to them. Community health education may be able to modify such general attitudes. The doctor in an area in which health educators are active cannot feel that he is working in an educational vacuum. He is not 'going it alone'.

SUMMARY

The education of patients may present the doctor with a number of practical difficulties. Some of these practical problems, and their possible solutions, are discussed.

REFERENCES

- Burton, J. (1958): *Int. J. Hlth Educ.*, 1, 4.
- Edwards, W. In Massey, A. ed. (1949): *Modern Trends in Public Health*, p. 113. London: Butterworth.
- Expert Committee on Training of Health Personnel in Health Education of the Public (1958): *Wld Hlth Org. Techn. Rep. Ser.*, no. 156.
- Ferguson, W. (1955): *Med. Wld (Lond.)*, 83, 555.
- Gay, J. R. (1958): *J. Amer. Med. Assoc.*, 167, 1616.
- Jones, J. A. L. V. (1951): *Hlth Educ. J.*, 9, 104.
- Kark, S. L. and Steuart, G. W. (1957): *Ibid.*, 15, 131.
- Levy, D. M. (1954): *Amer. J. Publ. Hlth*, 44, 1113.
- Pariset, J. (1958): *Hlth Educ. J.*, 16, 59.
- Rosen, G. (1958): *Ibid.*, 16, 70.
- Ryle, J. A. (1944): *Lancet*, 1, 713.
- Skinner, M. L. and Derryberry, M. (1959): *J. Med. Educ.*, 34, 529.
- Steuart, G. W. (1958): *Brit. Med. J.*, 2, 590.
- Sutherland, A. M. (1959): *S. Afr. Cancer Bull.*, 3, 15.
- Ernstene, A. C. (1957): *J. Amer. Med. Assoc.*, 165, 1110.
- Committee on General Practice (1950): *General Practice and the Training of the General Practitioner*. London: British Medical Association.
- Dowling, H. F. and Shakow, D. (1952): *J. Amer. Med. Assoc.*, 149, 628.
- General Practice Review Committee (1953): *Brit. Med. J.*, 2, suppl. p. 105.
- Hadfield, S. J. (1953): *Ibid.*, 2, 683.
- Taylor, S. (1954): *Good General Practice*. London, Oxford University Press.
- Watts, C. A. H. and Cross, K. W. (1957): *Brit. Med. J.*, 1, 1112.
- Reader, G. G., Pratt, L. and Mudd, M. C. (1957): *Mod. Hosp.*, 89, 88.
- Balint, M. (1957): *The Doctor, his Patient and the Illness*. London: Pitman Medical Publishing Co.
- Jali, E. C. (1950): *Leech*, 21, 17.
- Pratt, L., Seligman, A. and Reader, G. (1957): *Amer. J. Publ. Hlth*, 47, 1277.
- David, S. T. (1953): *Hlth Educ. J.*, 11, 19.
- Simmons, O. G. (1957): *Hum. Organiz.*, 16, 7.
- Mpondo, G. Personal communication.
- Lee, S. G. and Barker, E. A. (1949): *Brit. Med. J.*, 1, 284.
- Paul, B. D. (1956): *Amer. J. Publ. Hlth*, 46, 1390.
- Williams, C. D. (1950): *Hlth Educ. J.*, 8, 172.
- American Academy of Pediatrics (1940): *Child Health Services and Pediatric Education*. New York, Commonwealth Fund. Cited by Dowling and Shakow *loc. cit.*
- Brown, J. A. C. (1958): *Med. Wld (Lond.)*, 89, 561.
- Aitken-Swan, J. and Paterson, R. (1955): *Brit. Med. J.*, 1, 623.
- Cope, Z. (1956): *Hlth Horizon*, Spring, 32.
- Wheeler, E. O., Williamson, C. R. and Cohen, M. E. (1958): *J. Amer. Med. Assoc.*, 167, 1096.
- Redlich, F. C. (1945): *Yale J. Biol. Med.*, 17, 427.
- Cartwright, A. and Martin, F. M. (1958): *Brit. Med. J.*, 2, 592.
- Galdston, I. (1949): *Amer. J. Publ. Hlth*, 39, 1276.
- Idem. In New York Academy of Medicine (1948): *Motivation in Health Education*, p. 3. New York: Columbia University Press.
- Steuart, G. W. (1951): *Hlth Educ. J.*, 9, 66.
- Ollerenshaw, J. G. (1957): *Med. Wld (Lond.)*, 86, 251.
- Gemmell, P. F. (1958): *Brit. Med. J.*, 2, suppl. p. 17.
- Radke, M. and Klisurich, D.: *Experiments in Changing Food Habits*, unpublished manuscript cited by Lewin, K. in Swanson, G. E. et al., eds. (1952): *Readings in Social Psychology*. New York: Henry Holt.
- Naish, F. C. (1954): *Lancet*, 1, 1343.
- Bureau of Current Affairs (1952): *Discussion Method*. London: Dennis Dobson.
- Pratt, L. (1956): *Soc. Prob.*, 4, 29.
- Chesler, J.: *Training the Medical Student for his Health Education Functions*. Awaiting publication.
- Kark, S. L. (1956): *Univ. Natal Gaz.*, 3 (no. 1), 1.
- Rosen, G. (1952): *Amer. J. Publ. Hlth*, 42, 687.
- Carr, T. E. A. (1953): *Med. Wld (Lond.)*, 79, 261.
- Walton, E. (1953): *Ibid.*, 79, 620.
- Gardlyloo (1956): *Ibid.*, 84, 60.
- Crombie, D. L. and Cross, K. W. (1958): *Ibid.*, 88, 524.
- Cohn, H. D. (1950): *Hlth Educ. J.*, 8, 1.
- Kark, S. L. (1950): *S. Afr. Nurs. J.*, 16 (no. 8), 9.
- Bogolopeva, L. (1956): *Hlth Educ. J.*, 14, 63.
- Davies, M. (1948): *J. Roy. Sanit. Inst.*, 68, 308.
- Johnson, A. M. and Johnson, C. S. (1952): *Hlth Educ. J.*, 10, 175.
- Langwill, K. E. and Vick, E. H. (1958): *Amer. J. Publ. Hlth*, 48, 1507.
- Skinner, M. L. and Derryberry, M. (1954): *Publ. Hlth Rep. (Wash.)*, 69, 1107.
- Strauss, H. (1945): *Amer. J. Publ. Hlth*, 35, 1175.
- Mqadi, M. Personal communication.
- Cassel, J. in Paul, B. D., ed. (1955): *Health, Culture and Community*. New York: Russell Sage Foundation.
- Steuart, G. W. (1957): *S. Afr. Med. J.*, 31, 96.
- Steuart, G. W., Meharchand, A., John, J. and Gajadhar, B. (1958): *J. Indian Med. Assoc.*, 30, 357.
- Steuart, G. W. and Ward, N. T. (1957): *Hlth Educ. J.*, 15, 7, 178 and 240.

COLLEGE OF PHYSICIANS, SURGEONS AND GYNAECOLOGISTS OF SOUTH AFRICA

SIMS TRAVELLING PROFESSOR FOR 1960

Mr. Douglas Robb, C.M.G., M.D., F.R.C.S., Sims Travelling Professor for 1960, accompanied by Mrs. Robb, will arrive in South Africa on 2 May 1960, on a month's visit, which will include some of the larger centres of the Union and the medical schools of 5 universities.

With the assistance and cooperation of the Medical Association of South Africa and the university authorities, the tour of the Sims Travelling Professor is organized every year by the College of Physicians, Surgeons and Gynaecologists of South Africa.

Mr. Robb was born in New Zealand of Scottish parents in 1899. He received his education at the Auckland Grammar School and later attended the University College at Auckland and the Otago University, where he obtained the M.B. degree in 1922. From 1923-28 he was engaged in postgraduate work in England, and obtained the F.R.C.S. (Eng.) in 1926. His further achievements are as follows: R.S.O. Ipswich 1927-28; M.D. 1929; F.R.A.C.S. 1930; Ch.M. 1938; Hon. F.A.C.S. 1959 (conferred on him at Atlantic City in October 1959).

From 1928 until 1959 he was in private practice as a general surgeon in Auckland, with part-time appointments to the Auckland and Greenlane Public Hospitals. As senior surgeon of the

Unit at the latter hospital since 1942, he developed thoracic and, later, cardiac and vascular surgery. This hospital has a provincial field for thoracic and a national field for cardiac surgery. During the last 12 months his two younger, full-time colleagues carried out 25 by-pass intracardiac operations on the Melrose Machine.

His other activities include 20 years' membership of the Council of the University of Auckland—latterly as Pro-Chancellor; 10 years Senator, New Zealand University; membership, New Zealand Medical Council; member, New Zealand Medical Research Council and Vice-President of the Auckland Medical Research Foundation; Chairman for 15 years of Auckland Postgraduate Medical Committee, and, finally, a member of the Pan Pacific Surgical Association and the International Society of Surgery.

Mr. Robb is the author of many surgical articles and he has also written on medico-social subjects such as group practice, hospital administration, out-patients, postgraduate education and medical teaching, and health services in general.

In 1959 he gave the Judd-Plummer Lecture at the Mayo Clinic on 'Evaluation of the New Zealand Medical System'; a subject on which he is an authority.

SOUTH AFRICAN PAEDIATRIC ASSOCIATION (M.A.S.A.)

FOURTH SOUTH AFRICAN PAEDIATRIC CONGRESS

The 4th South African Paediatric Congress took place at the Red Cross War Memorial Children's Hospital, Rondebosch, Cape, on 4, 5 and 6 April. The Congress, under the chairmanship of Dr. I. Mirvish, of Cape Town, was well attended. Prof. G. Fanconi, of Zurich, who was visiting South Africa under the auspices of the Paediatric Association, was the guest-of-honour at the Congress.

Among the papers read at the Congress were the following: Early signs of cerebral palsy (Dr. B. Epstein, Pretoria), The heart in kwashiorkor (Dr. P. M. Smythe, Cape Town), Carbohydrate metabolism in kwashiorkor (Dr. L. S. Taitz, Johannesburg). Application of recent research in the treatment of kwashiorkor (Dr. J. D. L. Hansen, Cape Town), Kwashiorkor and cultural change (Miss A. Moodie, Cape Town), Viral myocarditis (Prof.

J. G. A. (Dr. R. J. H. L. babies (I in child respiratory tests in aids to Sputum

Attention ment of by Mess ment of to the S 'hypoten

College On 14 a given at to give wishing van Niel of Good with the Cape T

South A Meeting 5.10 p.m. Zoutend munoha

Universi Africa (will be Lecture Prof. L. Medical

Prof. J. Univers USA, h the Ma Childre

Dr. Mo joined h practice Telepho

Bone 220 i The C

Firstly, has esta To the book o lies in based o contro classific of 'spli In th there are a n several cians an

J. G. A. Davel, Pretoria), Fanconi's anaemia and its treatment (Dr. R. McDonald, Cape Town), Surgery of the newborn (Prof. J. H. Louw, Cape Town), Domiciliary treatment of premature babies (Dr. I. Robertson, Cape Town), Solitary cysts of the lung in children (Mr. W. Phillips, Cape Town), Electronic neonatal respiratory monitor (Dr. W. E. B. Edge, Durban), Spirometric tests in children (Dr. H. de V. Heese, Cape Town), Pathology: aids to diagnosis in paediatrics (Dr. D. McKenzie, Cape Town), Sputum collection in children (Dr. I. Mirvish, Cape Town),

Staphylococcal infection in infancy (Dr. F. C. Friedlander, Pietermaritzburg), and Purulent meningitis (Dr. S. Esrachowitz, Cape Town).

Information about Professor Fanconi's visit and lectures was published on page 246 of the *Journal* for 19 March 1960.

In addition to the lectures, medical and surgical cases were demonstrated. Social events included a Mayoral reception at the City Hall, Cape Town, and a Dinner at the Vineyard Hotel, Newlands.

FARMASEUTIESE NUUS : PHARMACEUTICAL NEWS

DARENTHIN

Attention is called to an error that occurred in the insert advertisement of 'Darenthin' brand brenthium tosylate, a drug marketed by Messrs. Burroughs Wellcome & Co. (S.A.) Ltd. for the treatment of hypertension, which was published as a supplement to the *South African Medical Journal* of 16 April 1960. The word 'hypotension' was erroneously printed on the display side of the

insert instead of the correct word 'hypertension'. The same error was made in the display word in the advertisement on page ii (inside cover page) of the same issue of the *Journal* as well as in a previous issue. We wish to apologise to Messrs. Burroughs Wellcome & Co. (S.A.) Ltd. for any inconvenience caused by the occurrence of this typographical error.

IN DIE VERBYGAAN : PASSING EVENTS

College of General Practitioners, Cape of Good Hope Faculty. On 14 and 15 May 1960 the Upjohn Travelling Lectures will be given at Springbok. A team of specialists will visit Springbok to give lectures and demonstrations. All doctors in the vicinity wishing to attend can obtain further particulars from Dr. Ivan van Niekerk, P.O. Box 33, Springbok. Any members of the Cape of Good Hope Faculty wishing to attend should communicate with the Secretary, College of General Practitioners, P.O. Box 643, Cape Town.

South African Institute for Medical Research, Staff Scientific Meeting. The next meeting will be held on Monday 9 May at 5.10 p.m. at the Human Sera Laboratory, Rietfontein. Dr. A. Zoutendyk will demonstrate the Blood Transfusion and Immunohaematology Unit.

University of Cape Town and Association of Surgeons of South Africa (M.A.S.A.) Joint Lectures. The next lecture in this series will be held on Wednesday 4 May at 5.30 p.m. in the E-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape. Prof. L. Eales will speak on 'Porphyria'. All members of the Medical Association are welcome.

Prof. J. T. Hayward-Butt, M.D., F.F.A.R.C.S., formerly of the University of Natal, Durban, and of the University of Iowa, USA, has now been appointed Director of Anesthesiology at the Maricopa County General and Arizona State Crippled Children's Hospitals in Phoenix, Arizona, USA.

Dr. Morris H. Berk, M.B., B.Ch., D.A. (R.C.P. & S., Eng.), has joined Drs. Samuel Hoffmann and Louis Shubitz in anaesthetic practice at 705 Harley Chambers, Jeppe Street, Johannesburg. Telephones: Rooms 22-5309, 22-2040; residence 40-3749.

Noristan Prize. Messrs. Noristan Laboratories (Pty.) Ltd. have announced that their Committee have decided to award the Noristan Prize for 1959 to Dr. P. D. Lynch, of Margate, Natal, for his article 'Holiday maladies and a holiday practice on the Natal Coast', which appeared in the *Journal* of 17 January 1959 (33, 58).

According to the Rules governing this award, a prize of 50 guineas is awarded annually for the best original contribution from a general practitioner registered and practising in the Union of South Africa, published during any calendar year in any recognized South African medical journal. According to the Rules, the award is made by a committee of medical experts appointed by the Board of Directors of Noristan Limited, and the selection of Dr. Lynch's article has, in fact, been made in accordance with the regulations.

Research Forum, University of Cape Town. The next meeting of Research Forum will be held on Wednesday 4 May at 12 noon in the Bennie de Wet Lecture Theatre, A-floor, Groote Schuur Hospital, Observatory, Cape. Dr. A. O. Lurie will speak on 'Adrenal function in malnutrition (I) Pellagra', with Dr. W. P. U. Jackson. All who are interested are invited to attend this meeting.

Mr. Paul Marchand, M.D., Ch.M., F.R.C.S., thoracic surgeon, of Johannesburg, left for Minneapolis, USA, on 22 April to study open-heart surgery under Dr. W. Lillehei for 3 months on a Wellcome Trust Fellowship. Mr. Marchand is expected to return to Johannesburg during August 1960.

Dr. R. F. Fouché, M.R.C.P. (Edin.), D.M.R.D. (R.C.P. & S.), diagnostic radiologist, has joined Drs. P. A. R. le Roux and A. H. McCallum in partnership at 86 St. George's Street, Cape Town. Telephone: Rooms 2-3171. Dr. Fouché was formerly senior registrar at the London Hospital, London.

BOEKBESPREKINGS : BOOK REVIEWS

BONE TUMOURS

Bone Tumours. 2nd edition. By L. Lichtenstein, M.D. Pp. 402. 220 illustrations. South African price: 63s. 9d. St. Louis: The C. V. Mosby Company. 1959.

Firstly, it must be acknowledged that the first edition of this book has established a position few other books in this field enjoy. To the clinician, radiologist and pathologist alike, as a reference book on bone tumours it is of great value. Much of its appeal lies in the author's concise and practical approach, obviously based on considerable experience, to a subject still in many ways controversial, and he has succeeded by adhering to the simplest classifications and not indulging in the all too common practice of 'splitting'.

In the present edition the original format is preserved but there are many additions to enhance the value of the book. There are a number of additional illustrations (65) and pages (87), and several new chapters, including an introductory chapter to clinicians and pathologists, a chapter on tumours of periosteal origin,

and discussions on tumours of synovial joints, bursae and tendon sheaths. The discussion on non-neoplastic lesions of bone which may be mistaken for tumours has been amplified. At the end of each chapter the references have been brought up to date.

The author's remarks on the value, if not the absolute necessity, of adequate clinical and radiological data in the histological diagnosis of bone tumours, should be underlined; the pathologist is still too often expected to commit himself in the absence of this information. Undesirable as this practice may be in histological diagnosis in general, it is to be deprecated all the more in the difficult subject of bone tumours. It is of interest to note that the author still recognizes Ewing's sarcoma as a histological entity, but with the admission that much has still to be learned about its pathogenesis. His restriction of the term osteogenic sarcoma to a neoplasm derived from bone-forming mesenchyme and capable of forming osteoid is to be preferred to a definition that embraces chondrosarcoma and fibrosarcoma as well; this restriction will leave no doubt about the seriousness of the prognosis. C.J.U.

CLINICAL PSYCHOLOGY

Progress in Clinical Psychology. Volume III. Edited by Daniel Brower, Ph.D. and Lawrence E. Abt, Ph.D. Pp. vi + 249. \$7.75. New York and London: Grune & Stratton, Inc. 1958.

This volume is a summary of progress in the various spheres of clinical psychology. Facilities for training clinical psychologists are under consideration at present in South Africa—an advance long overdue, for no psychiatric team can be considered complete without trained clinical psychologists.

Many clinical psychologists would consider their function confined to the application to patients of tests of intelligence and aptitude; the validity of tests of personality (projective tests such as the Rorschach) is more controversial. A major part of this book deals with psychodiagnostic tests, their rationale, methodology and application. A considerable part of the book is devoted to research into psychotherapy (in the USA much of the scientifically-controlled investigation into this form of psychiatric treatment is being undertaken by clinical psychologists). While medical men may have objections to the participation of laymen in the actual treatment of psychiatric patients, this book makes clear how much promising and provocative research into psychological treatment is being done at present by clinical psychologists.

The present review of progress will be of much interest to medical readers, although sometimes current trends are evaluated by standards which are insufficiently critical. The chapter on newer approaches in psychotherapy (as devised by Rotter, Kelly and Phillips), which differ from the psycho-analytical depth approach in emphasizing social problem-solving, and in being a-historical, describes stimulating new approaches. There are excellent chapters on group psychotherapy and rehabilitation therapy. H.W.

ELECTRO-ENCEPHALOGRAPHY, CLINICAL NEUROPHYSIOLOGY AND EPILEPSY

Proceedings of the First International Congress of Neurological Sciences, Brussels. Vol. III. Electroencephalography, Clinical Neurophysiology and Epilepsy. Edited by L. van Bogaert and J. Radermecker. Pp. 707. Illustrations. 140s. London, New York, Paris, Los Angeles: Pergamon Press. 1959.

Electro-encephalography has a vital place in neurophysiology; without it much important recent work would have been impossible and it is full of promise of further advances in the near future. In clinical neurology, also, it has become an essential tool which gives great, and sometimes essential, assistance in the elucidation of bedside problems; no worth-while department can exist without its help. Electro-encephalography, clinical neurophysiology, and epilepsy, comprised one of the four important sections of the First International Congress of Neurological Sciences held in Brussels in 1957, and this book is a report of the proceedings of this section. As such it will be of great interest to the neurophysiologist, neurologist and electro-encephalographer despite the expected differences in standards of more than 130 papers. Unfortunately, unless one also possesses the small volume of proceedings available at the time of Congress, the book is not a complete record. It is a great pity that the *Excerpta Medica* preliminary publication was not included; it could well have been considering what one is asked to pay for this volume. S.B.

MEDICAL HISTORY OF THE WAR: VOL. III

The Army Medical Services. Campaigns. Volume III. Sicily, Italy and Greece (1944-45). By F. A. E. Crew, F.R.S. Pp. xxxviii + 645. 136 figures. 100s. net. London: Her Majesty's Stationery Office. 1959.

This volume carries the medical history of the Second World War from the conquest of North Africa through the whole of the Italian Campaign and so has a very special interest for all South African readers.

The form in which the narrative is compiled is such that the reader's interest is held throughout. In each phase, strategic considerations are given fully. This is followed by a description of the terrain over which the battle was to be fought. An assessment of the Medical Intelligence is made, then the tactical plan is

provided. Since the climate, the enormous natural strength of the enemy position, and the prevalence of endemic disease, presented formidable obstacles in the battle area, with its built-up and crowded civilian conditions, this is given in a detailed manner.

As the campaign proceeds, the operation of medical units in action, together with the problems which were encountered *en route*, is unfolded. I enjoyed the critical appraisal of all medical arrangements which is given at the end of each chapter. The account of the organization and the scope of the work of the blood-transfusion unit, too, is worthy of the closest attention.

The descriptions of the principal diseases from which the troops suffered—malaria, hepatitis, VD—and the account of the typhus epidemic in the civilian population of Naples, will delight the clinical reader.

Finally, the summary of the lessons learnt in the Italian Campaign, from a medical point of view, is of the greatest importance to the professional soldier.

The book has countless excellent maps and photographs and, like its predecessors, this volume reflects great credit on the editor and his collaborators. R.L.F.

X-RAY INTERPRETATION

The Essentials of Roentgen Interpretation. By Lester W. Paul, M.D. and John H. Juhl, M.D. Pp. xvii + 839. 1,203 illustrations. \$25.00. New York: Paul B. Hoeber, Inc. 1959.

Most medical students, in the course of their travels from 1st M.B. to qualification, use, study and sometimes even buy, quite a large selection of quite large text-books. They range in subject matter from physics to physick, but do not in my experience, ever include a book on diagnostic radiology.

During the course of medical studentship and in the subsequent qualified life, there is one really prominent, highly reliable, ever present, ubiquitous yet selective diagnostic aid available to us. On this subject general practitioners are largely ignorant. A few specialists have a passing knowledge of it, where it impinges upon the narrow confines of their speciality. Almost none of them, student, practitioner or consultant, has ever owned or read a text-book of diagnostic radiology. This is not entirely their fault, for the type of books available have not always lent themselves to general use.

This defect has at last been well and truly rectified by this publication. Beginning with a simple and short résumé of the physics of X-radiation, it proceeds succinctly and clearly through the whole gamut of diagnostic radiology. Nothing of importance is omitted; some of it is in small print but all of it is lucidly set forth. The illustrations are copious and clear and all are in negative form. This last is most important; an illustrative X-ray picture should be the same as the original, viz. a negative; the way in fact, in which the doctor will meet it at the bedside. The paper and printing are of the highest quality, and the type, being set out in two columns per page, breaks even the heaviest chunks up into digestible portions. The illustrations are right alongside the relevant text, not 2 or 3 pages fore or aft of the reading point.

This is a book which should be read by all medical students and kept for later reference; it is a 'must'—a basic essential—for all radiology students, and will be a source of great and surprising interest to all general specialists.

It has only one snag—unfortunately quite a large one—25 dollars. W.J.L.

PAINLESS CHILDBIRTH

Childbirth without Pain. By Pierre Vellay *et al.* Pp. 216. Illustrations. 35s. net. London: Hutchinson of London with George Allen & Unwin. 1959.

In this book a group of French doctors have set out to explain how childbirth can take place without pain through the 'psychoprophylactic' method. It is written primarily for the pregnant mother (and her husband). The method was developed by the late Dr. Fernand Lamaze.

Fairly detailed instruction is given in the physiology of pregnancy and the process of labour. The neuromuscular control of uterine action is described, together with the correct part to be played by the control of respiration. Many actual case histories are given and the book includes several serial photographs of the final stages of labour.

I feel that the average pregnant woman will find this book rather difficult reading and in places too detailed. She will also find the instructions rather difficult to carry out. E.M.S.

Medic
M.D.
Londo

This bo
Monogr
almost
matolog
however
graph th
and pres

The p
but the
the desc
the inclu
on the d
problem.
pause, b

Althou
did not
nor did
small bo
who has
patients.
are only
Practiti
climacter
in a sty

Somat
dahl,
Willia

As is ex
Westma
stating
ing to S
examine
1,013 ca
method
cases. T
ance of
tomy.
Caesare
only occ
body of
of dama
The indi
indicatio
disease
foreseen
tarian ir
are diffi

A Sym
M.R.C.
616.
Wright

Hierdie
Die inho
hersen
logie. A
van die
steroides
spiervers
bedagte
Soos
narkoses
hierdie
gaan ein
masjien'
as 'n ro

THE MENOPAUSE

Medical Management of the Menopause. By M. B. Goldberg, M.D. Pp. viii + 98. Illustrations. \$4.50. New York and London: Grune & Stratton, Inc. 1959.

This book is one of the series of publications 'Modern Medical Monographs' edited by Wright and Orr. In spite of its title, almost half of the book is devoted to the physiology, symptomatology and diagnosis of the menopausal syndrome. This, however, enhances its value. In the course of preparing the monograph the author made a detailed review of 100 of her own patients, and presents statistics derived from this group.

The physiology of the menopause is not dealt with in detail, but the chapters on the symptomatology and diagnosis are; and the descriptions of the symptoms are made more interesting by the inclusion of diagrams drawn in cartoon fashion. The section on the diagnosis of a premature menopause, a difficult diagnostic problem, is particularly good. The management of the menopause, both normal and abnormal, is dealt with in some detail.

Although a bibliography is appended, the author obviously did not intend to present an extensive review of the literature nor did she mean this to be a reference work on the subject. This small book presents the views and personal experience of one who has had an extensive experience of dealing with menopausal patients. Most of her views are balanced and modern and there are only a few statements that would not be acceptable to all. Practitioners who have to deal with patients going through the climacteric will find this a useful and practical book, written in a style which makes light and easy reading. F.B.

COMPLICATIONS OF LEGAL ABORTION

Somatic Complications following Legal Abortion. By Jan Lindahl, translated by S. H. Vernon. Pp. 182. 42s. net. London: William Heinemann Medical Books Ltd. 1959.

As is expected of any publication from the clinic of Prof. Axel Westman, this book is of a high standard. An accurate and painstaking review of 1,188 operations done for legal abortion according to Swedish law is presented. 1,132 patients have been re-examined after 3 weeks (by 30-40 different gynaecologists) and 1,013 cases have been followed up for 5 years. The commonest method used was vaginal hysterotomy, which was done in 983 cases. The only complication of any importance was the appearance of endometriosis in 19.8% of cases after vaginal hysterotomy. Vaginal hysterotomy is generally regarded as a vaginal Caesarean section. Its gynaecological application is rare, it being only occasionally used for the removal of large polyps of the body of the uterus and of submucous myomas. A certain amount of damage and distortion of the cervical canal is unavoidable. The indications for legal abortion vary widely from the recognized indications. The author groups the indications as follows: Mental disease 303 cases, somatic disease 84 cases, weakness 615 cases, foreseen weakness 157 cases, eugenic indications 27 cases, humanitarian indication 2 cases; total 1,188 cases. The last 4 indications are difficult to understand. W.W.

ANESTESIOLOGIE

A Synopsis of Anaesthesia. 4de uitgawe. Deur J. Alfred Lee, M.R.C.S., L.R.C.P., M.M.S.A., F.F.A.R.C.S., D.A. Pp. vi + 616. 72 illustrasies. 27s. 6d. + 1s. 3d. posgeld. Bristol: John Wright en Seuns Bpk. 1959.

Hierdie alombekende werk het geen bekendstelling nodig nie. Die inhoud van die derde uitgawe is tot in sy fynste besonderheid hersien in die lig van die jongste ontwikkelings in die anesthesiologie. Aanvullende informasie verskyn in haas alle onderafdelings van die vak, o.a. halotaan, fluoromar, die nuwe barbiturate en steroïdes, analeptiese middels, die fenotiasien-groep van middels, spierslappers, narkosetegniese vir torakschirurgie, en voorbedagte hipotensie en hipotermie.

Soos in die verlede sal die algemene praktisyn en die nagraadse narkosistudent op die vooraand van 'n eksamen veel baat by hierdie werk vind. Die resensent wonder tog net waar dit alles gaan eindig. Moet ons verwag dat hierdie fyngedrukte, 'worsmasjien' van beknoppe informasie eersdaags, streng ensiklopedies, as 'n reeks bundels per uitgawe gaan verskyn? J.A.P.

SURGICAL PHYSIOLOGY

A Text-book of Surgical Physiology. By R. Ainslie Jamieson, M.B., F.R.C.S.Ed. and Andrew W. Kay, M.D., Ch.M., F.R.C.S.Ed., F.R.F.P.S.G. Pp. vii + 623. 186 figures. 55s. net + 3s. 2d. postage abroad. Edinburgh and London: E. & S. Livingstone Ltd. 1959.

A limited number of books dealing with surgical physiology have appeared in recent years, but there is still a great need for one that will cover the subject clearly, concisely and fully. This book attempts to do so, and it is one that I can recommend for the practising surgeon who wants to refresh his knowledge, and for the postgraduate student in surgery.

It is evident that this text-book has been written by practising surgeons, and it is more a short text-book of surgery with a background of applied physiology than a book on physiology. Surgeons specially interested in physiology will find the book disappointing, and it does not quite meet the needs of the postgraduate student in surgery who is studying physiology for his primary examination. But for his final examinations in surgery he should study this book, which will refresh his physiological knowledge and give him all the applied physiology he needs.

The whole field of surgery is covered concisely. Unfortunately, important aspects are sometimes covered in too short a space—for example, the effects of atomic bombs and the heart-lung machines.

The book reads easily and is up to date; for example, primary aldosteronism and auto-antibodies in Hashimoto's disease are discussed. The illustrations are practical and well chosen. At the end of each chapter classical and important references are given. B.J.v.R.D.

BLOEDSTOLLINGSPROSESSE

Klinische Methoden der Blutgerinnungsanalyse. Von Prof. Dr. J. Jürgens und Doz. Dr. F. K. Beller. xii + 408 Seiten. 104 Abbildungen. DM 56.00. Stuttgart: Georg Thieme Verlag. 1959.

In die eerste deel van hierdie werk word 'n teoretiese oorsig met wye literatuuroopgawe van die fisiologie en kinetiek van bloedstollingsprosesse aangebied. Laasgenoemde prosesse word tans (en voorlopig) in 4 fases, wat onderling die nouste verband het, geïnterpreteer.

Die praktiese waarde van die toepassing van hierdie teoretiese kennis van hemostase, asook van antistollingsterapie in kliniese gevalle, word bespreek, byvoorbeeld, die verband tussen bloedstolling en leweraandoeninge, diabetes mellitus, arteriosklerose, disseminasie van intravasculaire koagulasie, en ander siektetoestande.

In die tweede deel van hierdie bundel word metodes beskryf wat gebruik word by die ondersoek van verskillende faktore betrokke in die prosesse van bloedstolling, soos byvoorbeeld trombose, en plasmafaktore betrokke in die voor-fase en eerste fase van hemostase, fibrinogeen en die fibrinolitiese sisteem, asook faktore wat die bloedstollingsprosesse inhibeer.

Metodes vir die bepaling van die gesamentlike tyd van bloedstolling word ook nog verstrekk.

Ten laaste word metodes van voorbereiding en reagentiese aangedui wat gebruik word tydens die ondersoek van bloedstollingsfaktore in plasma, met die toevoeging van verskeie *in vitro* reagerende antikoagulasie stowwe. J.L.

ALDOSTERONE

Aldosterone in Clinical and Experimental Medicine. By E. J. Ross, M.D., Ph.D., M.R.C.P. Pp. viii + 144. 22s. 6d. Oxford: Blackwell Scientific Publications Ltd. 1959.

This book is based upon an M.D. thesis by Dr. Ross, who worked on aldosterone while with Dr. Thorn and his group in Boston. Into a fairly small space the author has packed a first-rate account of the present position with regard to all facets of knowledge concerning aldosterone. By the very nature of this sort of monograph it is inevitable that much of it must soon become out of date, but at the moment it appears to survey all the important recent work. There is a very adequate list of references (over 540). The book is clearly written and not over-technical. It is plain that it can be highly recommended to all persons interested in the subject. W.P.U.J.

ILLINGWORTH'S SURGERY

A Short Text-book of Surgery. 7th edition. By C. F. W. Illingworth, C.B.E., M.D., Ch.M., F.R.C.S. (Ed.). Pp. viii + 547. 254 text-figures with 16 plates. 45s. net. London: J. & A. Churchill Ltd. 1959.

The seventh edition of Illingworth's Surgery indicates its continued popularity. The writing is clear, didactic and dogmatic—a little irritating for the postgraduate, but very suitable for the undergraduate student. Emphasis is laid on the commoner diseases and procedures and the price is right.

But even the author of a successful text-book has a duty and should feel an obligation to improve some of its less praiseworthy features. From where does he get these appalling illustrations? Does Fig. 52 come from Paget's original eponymous article? Those line drawings of Kocher's reduction of a dislocated shoulder—are they of the great Theodor himself in action? The reproduction of X-rays are lamentable. Those that do illustrate a point are heavily re-touched and those that are not re-touched illustrate nothing. Surely they are better omitted entirely?

There are otherwise few points of criticism. But withholding antitoxic serum except in 'punctured wounds or devitalized wounds heavily infected' is certainly not justified.

The book is recommended for the undergraduate student.

T.S.

NEURO-ANATOMY

Strong and Elwyn's Human Neuroanatomy. 4th edition. By R. C. Truex. Pp. xiii + 511. Illustrated. 80s. London: Baillière, Tindall and Cox Ltd. 1959.

The rearrangement of information and the additions made to the previous edition of this well-known text-book will be appreciated by all students of neurology. For those with little basic anatomical knowledge, a consideration of the comparative anatomy and embryology followed by a description of the gross features of the brain and spinal cord makes an easy introduction. However, the histology and the segmental and peripheral distribution of nerves are treated rather fully for a work intended primarily as a 'student text-book'. The rewritten chapter on the fibre tracts of the spinal cord provides an excellent account with clear illustrations of the nerve pathways and their disruption in various disease processes. The internal structure of the brain and brain stem are beautifully illustrated by diagrams and photographed serial sections, which makes for a clear understanding of cerebral function discussed in the text.

This book, with its many colour illustrations and thorough bibliography, is recommended to all students of neurology and neurosurgery.

P.C.K.

BRIEWERUBRIEK : CORRESPONDENCE

STENOSIS OF ECTOPIC ANUS

To the Editor: The following case of stenosis of the ectopic anus will, I hope, interest your readers:

An African female baby, aged 7 months, was admitted to this hospital with stenosis of the anus and its forward displacement towards the vagina. The anus would not admit the little finger, but it was possible to introduce a small urethral bougie. It was therefore dilated with bougies under sedation with chloral hydrate until wide enough to admit the little finger, which was tightly grasped by the anal sphincter. On introducing a finger into the vagina with the little finger in the rectum, I could feel only the anal sphincter and a septum separating the two fingers. On withdrawing the finger from the rectum a copious discharge of faeces resulted.

A week later the anus was again dilated, and I intended to continue dilating the sphincter for a considerable period. Unfortunately, however, the baby's mother, evidently thinking that the condition was cured, has now taken the baby to her home some distance away, where attempts are being made to trace her.

Denis Browne,^{1,2} to whom I am grateful for advice about treatment, describes the condition from which this baby suffered. It is known as 'shot-gun perineum' the main feature of which is that the anus and vagina lie with their edges touching, without the normal strip of skin intervening, like the barrels of a double-barrelled shot-gun. Mr. Browne says that all misplaced anuses tend to be small. Malformations of the anus and rectum have also been described fully by Prof. J. H. Louw.³

The important point in treatment is that the stenosed anus should be got to work without delay, and dilatation should be continued for many months.

S. V. Humphries

Lilongwe African Hospital
Lilongwe, Nyasaland
9 April 1960

1. Browne, D. (1955): Arch. Dis. Childh., 30, 42.
2. *Idem* (1951): Ann. Roy. Coll. Surg. Engl., 8, 173.
3. Louw, J. H. (1959): S. Afr. Med. J., 33, 874.

CARCINOGENIC RISKS OF IRON-DEXTRAN

To the Editor: A recent article in the lay press¹ on the alleged carcinogenic effects of an iron-dextran compound (Imferon) cannot be allowed to pass without comment. Articles of this kind may give rise to alarm, both among doctors who have used the compound, and in patients who have received it. I would therefore be grateful for the use of some of your space in an attempt to place this subject in correct perspective.

It is not disputed that massive doses of iron given by intramuscular injection to rats produce a high yield of sarcoma at the site of injection,² and these results have been confirmed in

the laboratories of the manufacturer's themselves. However, with a lower dose range, still exceeding by 50 times the total human clinical dose on a weight basis, the yield of sarcoma is considerably lower, and in fact even lower than published figures for tumours obtained by the injection of many other apparently harmless substances like glucose, etc.³

It is extremely unlikely that the carcinogenic action of the iron-dextran complex is merely the result of a direct local action of this substance. The local changes,⁴ such as necrosis of muscle with subsequent replacement by iron-laden macrophages, produced by repeated massive injections of iron-dextran, are never found in man or animals when the complex is administered in therapeutic dose. Similarly, changes in tissue enzymes,⁵ vitamin-E deficiency,⁶ and altered liver physiology⁷ are some of the marked systemic changes produced by massive doses—changes which do not occur when a therapeutic dose is given.

The universal carcinogenic effect of iron is also very questionable. Thus, although sarcoma can be produced in rats and mice with massive doses of iron dextran, massive doses are unable to produce any tumours in the rabbit or guinea-pig, and only very rarely in the hamster.⁸ Whether such massive doses, in the range of 50 times the normal dose, given therapeutically to man might ever produce sarcoma is therefore very doubtful.

There is no evidence that a local lesion resembling that produced in animals with massive doses of iron-dextran ever occurs in man with clinical doses of Imferon; there is thus no evidence that there is a risk of sarcomatous change occurring in man with clinical use of Imferon. It would indeed be a great pity if a product, which has established itself as probably the best form of administering iron in the treatment of one of the most common clinical disorders seen in man (iron-deficiency anaemia), is withheld because of lesions produced in one species of laboratory animal after something like 50 times the usual dose given to man.

J. Metz, M.D.

Haematology Department
South African Institute for Medical Research
P.O. Box 1038, Johannesburg
11 April 1960

1. *Cape Argus*, 16 March 1960.
2. Richmond, H. G. (1959): Brit. Med. J., 1, 947.
3. Hartwell, J. L. (1951): *Survey of Compounds which have been Tested for Carcinogenic Activity*. Bethesda, Md.: National Cancer Institute, National Institutes of Health.
4. Beresford, C. R., Golberg, L. and Smith, J. P. (1957): Brit. J. Pharmacol., 12, 107.
5. Golberg, L., Martin, L. E., Bates, C. M. and Batchelor, A. (1959): Biochem. J., 72, 20.
6. Golberg, L., Smith, J. P. and Marten, L. E. (1957): Nature (Lond), 179, 734.
7. Golberg L. and Smith J. P. (1960): Amer. J. Path., 36, 125.
8. Haddow, A. and Horning, E. S. (1960): J. Nat. Cancer Inst., 24, 109.